

# ITEMS OF INTEREST.

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## ORIGINAL COMMUNICATIONS.

### ORAL DISEASES;

### SURGICAL AND NON-SURGICAL.

*By W. F. Rehfuss, D.D.S., and L. Brinkmann, M.D.*

[CONTINUED FROM PAGE 200.]

#### STOMATITIS MYCOSA (THRUSH) AND OTHER PARASITIC ORAL AFFECTIONS.

The mouth is the breeding-ground for scores of bacteria, and the medium through which the germs of diseases gain their entrance into the body.

It has been demonstrated that pulmonary diseases, derangements of the digestion, etc., are frequently produced by the inspiration of such germs from the oral cavity. Hence it is rational to assume that, if general organic diseases, remote from the mouth, can have their origin traced to this source, the oral mucous membrane, which is in constant contact with these germs, must likewise be affected by them.

If there is an abrasion or other mechanical injury of the membrane, septic inflammation will undoubtedly occur, which is manifested by some form of inflammatory lesion.

The reliable bacteriological investigations of Miller have produced most valuable scientific results, and an increased knowledge of the etiology of various oral lesions, aside from that of dental caries.

He has fully recognized the pathological effects of septic infections of the oral mucous membrane, and by accurate microscopic demonstrations has shown that these germs are constantly present in the mouth, and demonstrated the diseases of the mouth which are co-incident thereto. These teachings have been almost universally accepted.

The oral diseases, whose origin can be directly attributed to micro-parasitic infections, are as follows:

- a. Stomatitis mycosa (thrush).
- b. Stomatitis epidemica.
- c. Disturbances from local injuries and irritations, superinduced by parasitic infection.
- d. Infections from uncleanliness, food fermentations, etc., in the mouths of debilitated persons.

STOMATITIS MYCOSA (THRUSH, WHITE MOUTH, SPRUE; FRENCH, MILLET, BLANCHET; GERMAN, SOOR; SWEDISH, TORK; DUTCH, SPROW),

(Plate, H, Figs. xxix, xxx, xxxi.)

is an erythematous condition of the oral mucous membrane, which is characterized by the formation on the membrane of white patches, produced by the development of the fungi (*sacchromyces albicans*).

*Etiology.*—Hippocrates was the first to note this disease, which he named *Aphthæ*. Many of the ancients were misguided as to its etiology, regarding the disease as ulcerative, papular or pustular. Some believed it to be of a diphtheritic nature. Many untenable theories were advanced till the discovery of the fungi, *sacchromyces albicans*, by Berg, of Stockholm (1840).

Rapid progress was made in the knowledge of this vegetable parasite. Grawitz proved that the fungus of thrush is not a mold, but a bud-fungi, the view now generally accepted. Reese showed that the fungus was a *sacchromyces*, producing fermentation and proposed the name *sacchromyces albicans*. The cells, in shape, are round, oval or cylindrical, depending on the condition of the cultivation.

The spores are inhaled into the mouth from the atmosphere; or infection is direct from unclean spoons, or feeding bottles, whose contents are undergoing fermentation, thus furnishing an excellent medium for the bud-fungi. Uncleanliness of the mouth is also an essential etiological factor.

It is a necessary requirement for the development of the fungi that the secretions of mucous surface be abnormal, as they will not propagate in a healthy mouth. An acid condition of the mouth is necessary for their growth.

The normal reaction of acid is alkaline, but in children it readily becomes acid. The growth of the fungi results in an increase of this acidity.

*Diagnosis.*—The patches have a pearly white appearance and slightly raised surface, thinner at the edges than in the center. They may appear as small spots varying in size from a pin's point,

or may coalesce, covering considerable area. They resemble the appearance of coagulated or curdled milk, for which it may be mistaken. There are several characteristics which serve to distinguish the thrush patch from the milk curd. The latter is easily removed, whereas the former are more or less adherent, and the membrane underneath, on removal of the thrush patch, is always inflamed. Microscopical examination will dispel all doubt. Each patch is surrounded by an inflammatory areola. In many cases the patches are strongly adherent. If rubbed off, the surface underneath will be found reddened and slightly bleeding. From the pearly color the patch may change to yellow or brown when they become loosened.

They are situated in the oral and pharyngeal cavities—on the tongue, lips, cheeks, and hard palate; less frequently on the gums and soft palate.

Thrush also occurs in adults in a debilitated condition and in wasting diseases. In children, there is no salivation, the mouth is dry and the membrane becomes very painful to the touch.

*Treatment.*—In the treatment of thrush, extreme cleanliness must be observed, and thus destroy the medium for the propagation of the germs. This is assured by carefully rinsing out the mouth after feeding the child, using a mild antiseptic for the purpose. All articles, such as feeding bottles, spoons, etc., should be thoroughly cleansed.

These hygienic precautions are absolutely necessary to insure a favorable prognosis.

The actual treatment consists in the removal and destruction of the patches, and the reduction of the inflammatory condition, the stomatitis, which is an invariable accompaniment of thrush. The patches may be rubbed partially off with the finger covered with a piece of lint or a napkin, but this must be supplanted by the use of an alkaline wash, which is destructive to the patches. It has been found that either borax, sulphite of sodium (3*ʒ*. to aqua 3*ʒ*), or sodium bicarbonate will best serve this purpose. The most effectual mode of application in very young children is by means of the spray, using a solution of either of the above recommended remedies in the atomizer, and thoroughly spraying the mouth with it about every hour or two. If much inflammation is present it may be alleviated by the use of a spray of listerine and hydrogen peroxid, or a solution of chlorate of potash may be employed. Again, the patches and inflamed area may be painted with borax and honey, or glycerin can be substituted for honey. Boracic acid

(10 per cent solution) is sometimes advantageous, as also are slightly astringent mouth washes in certain stages.

If the patches are abundant, and extreme septic conditions exist, a solution of chlorinated soda (1-12 to 16) with glycerin, is an effectual remedy. Phenol sodique (1-4 to 6) answers the same purpose. Thymol in glycerin or albolein sprayed on the parts is efficacious. Ulcers may develop when the patches are removed. Touching them up with a very dilute solution of silver nitrate, or sulphate of copper, generally suffices to cure them. Strict observance of diet, and the addition of small quantities of lime water to the milk is a necessity.

#### GANGRENOUS STOMATITIS.

(Plate H, Figs. xxxii, xxxiii.)

Gangrenous stomatitis manifests itself as a local inflammation, and is symptomatic of a generally depraved system. It is essentially a condition precipitated by malnutrition, by strumous affections, and in children who are badly fed and uncared for. When salivation occurs from the excessive use of mercurials, gangrenous stomatitis may follow. It may also be a sequel of a syphilitic infection. In such cases other objective symptoms will be present.

Gangrenous stomatitis may also be caused by the deposit of a microorganism, carried from some distant part of the body by the blood, and produce an embolus by coagulation at the point of lodgment, thus exciting gangrenous inflammation.

The inflammatory process originates in the afferent vessels. The mucous membrane presents a spongy, dark red, and œdematosus appearance. The membrane of the lip and cheek are sometimes involved, the teeth are discolored, and the breath fetid. It may often closely resemble alveolar ulcerative stomatitis. Where the inflammation continues, the gums are destroyed, laying bare the roots of the teeth; the nutrition of the teeth is thereby interfered with, causing them to drop out or require extraction.

The skin and mucous membrane of the cheek both present a glazed appearance, due to the infection and infiltration of the cellular tissues. The surface of the gangrenous patch or patches presents a grayish-yellow or greenish appearance, and is bathed with pus. Its borders are sharply defined and ragged.

**CASE I** (Plate H, Fig. xxxii) —A. C., male, aged 3 years; while playing with a sharp pointed stick, fell, the point of the stick entering and dissecting up the mucous membrane of the right cheek to the extent of about one inch. When seen shortly after the accident, he presented an anemic appearance, was of small stature, and evi

dently had not received proper nutrition in the past. The wound was washed out with a saturated solution of boric acid, and a mouth wash of equal parts of peroxid of hydrogen, listerin, and water was ordered to be used every two hours. On the second day after the accident the mucous membrane overlying the wound was deeply congested, and pus escaped from the wound of entrance. The next day the mucous membrane, which before was deeply congested, showed evidence of gangrenous change; it was surrounded by a deposit of lymph, and, on palpating the cheek, a hard mass could be felt, painful on pressure, and the skin covering it was tense and shiny.

A ten per cent solution of cocaine was applied to deaden the pain, after which the slough was excised. The base of the resulting ulcer was cauterized with acid nitrate of mercury, after its surface had been mopped to remove all moisture.

The mouth wash before mentioned was continued, and, in addition, the internal administration of two grains of quinin, ten drops of the tincture of chlorid of iron three times daily, combined with stimulants and nutritious liquid diet, brought the case to a favorable termination.

**CASE II** (Plate H. Fig. xxxiii).—C. B., male, aged 22 years, with a history of syphilitic infection, had attacks of recurrent mucous patches. Gangrenous stomatitis made its appearance during one of the attacks. When seen there was a gangrenous ulcer involving almost the entire mucous membrane of the hard palate. Active antisystolic medication was instituted, the gangrenous slough excised, the ulcer cauterized with fuming nitric acid, the mouth wash of peroxid, listerin, and water ordered, and only cold liquids permitted.

In this case stimulants would have been harmful, as they were one of the causes of the recurrence of the mucous patches.

Patient discharged after three weeks.

Gangrenous stomatitis may be a precursor to cancerous oris. A case in point will illustrate this. X, aged 4 years, with gangrenous ulceration of the mucous membrane of the upper alveolous, was brought to the surgical clinic of the Polyclinic Hospital, Philadelphia, for treatment; within two days this spread to the cheek, causing a typical cancerous oris.

#### CANCERUM ORIS.

(Plate H. Fig. xxxiv.)

Cancerum oris, otherwise known as noma, is an acute inflammatory disease, which may involve the lips, cheeks, and at times

even the maxilla. It is a disease of infrequent occurrence, usually found in the lower walks of life, among those children whose physical stamina is at the lowest ebb, and their surroundings are hygienically of the worst. It occurs as a sequela of the exanthematous fevers, and also follows an attack of malarial fever. As in gangrenous stomatitis it may occur from the deposit of micro-organisms. The onset may be most benign, appearing as a simple ulcer or abrasion of the buccal mucous membrane; again, the surface of the membrane may be covered with a dirty grayish exudation resembling a diphteritic patch, which imparts an exceedingly fetid odor to the breath. There is infiltration into the cellular tissues, which are swollen and exceedingly hard to the touch. As soon as infiltration takes place in the cheek, a red areola is seen in the skin overlying it; the inflammatory process continuing, the color deepens to a dark brown, then purple, and finally perforation of the cheek takes place. During the entire inflammatory stage the salivary glands are over active, producing ptyalism.

The prognosis in this affection is extremely grave in the majority of cases, though at times a better outlook is offered, where the patient is seen in time to prevent the extension of the inflammation, where exhaustion is not a prominent feature, and diarrhoea or broncho pneumonia are absent, also when it is not the result of microorganisms. If nervous symptoms, *viz.*, delirium or a typhoid state are present, the worst is to be feared, as these cases all terminate fatally.

As soon as the diagnosis of cancrum oris is established, the most active and radical treatment should be used, not only to prevent the spreading of the inflammation, but to avoid systemic infection, to lessen the liability to the development of a bronchopneumonia, or an exhausting and probably fatal attack of diarrhoea. To accomplish this most effectually, the patient must be anesthetized, and the entire affected area thoroughly curetted and cauterized, preferably by the actual cautery at almost white heat, or by the galvano cautery, or by fuming nitric acid. This accomplished, the resulting ulcer should be kept clean by the application of a boric acid lotion (25 grains to the ounce of water), to which may be added a little listerin to overcome the odor natural to ulcerations of this character.

Owing to the exhaustion produced by cancrum oris, every precaution should be taken to sustain the patient's strength. Stimulants should be freely administered, with the liquid diet, at regular intervals. Should the patient be unable to properly swallow the

food, it may be introduced into the stomach by passing a catheter through the nose into the pharynx and œsophagus, or by nutritious enemata suppositories. Quinin is clearly indicated, and is to be administered in three-grain doses four times daily. Iron is also of the greatest service. Of all the preparations the tincture of the chlorid is probably the best, and is to be given in ten-drop doses, three times daily as indicated.

Deformity, to some extent, always follows as a result of the contraction of the cicatricial tissue. This may be remedied at a future time by a plastic operation.

CASE I (Plate H, Fig. xxxiii).—R. M., male, aged 35 years, with a history of recurrent mucous patches, presented himself for treatment.

He had been under antisystolitic for twelve months. The cause for the recurrence of the patches was a constant and excessive use of alcoholic stimulants, as well as tobacco.

The gangrenous condition developed from one of these patches and spread rapidly over almost the entire mucous membrane covering the hard palate. There was a narrow strip of apparently normal alveolar mucous membrane extending around and within, measuring from one-quarter to one-half inch in breadth; posteriorly it involved the upper portion of the anterior half arches.

The treatment consisted in absolutely forbidding the use of alcohol or tobacco, cauterizing the entire gangrenous patch with ac. nitrate of mercury and a mouth wash of equal parts of hydrogen peroxid and listerin, the hypodermic injection of one-quarter of a grain of corrosive sublimate, in solution. The normal condition was restored after four weeks' treatment.

(*To be continued.*)

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NATURE'S PROTECTION OF THE MOUTH.—Dr. Joseph declared at the last meeting of the Odontological Society of Paris that the reasons why the oral cavity resists infection so well are as follows:

1. The anatomical constitution of the epithelial coating of the mouth.
2. Relative immunity acquired by the tissues constituting the buccal cavity.
3. Functional activity of the mouth.
4. The conflict of pathogenous and saprogenous microorganisms.
5. Special and microbicidal qualities of the saliva.

## DENTAL PATENTS.

[Copies of these patents may be had of W. E. Aughinbaugh, patent attorney, Washington, D. C., at ten cents each.]

492,432, Dental Engine. Charles E. Rhone, Bellefonte, Pa. Filed May 11th, 1892.

492,433, Dental Engine. Charles E. Rhone, Bellefonte, Pa. Filed October 15th, 1892.

492,434, Dental Apparatus. Alvan S. Richmond, New York, N. Y., assignor to John S. Huyler. Filed December 15th, 1892.

492,830, Dental Plugger. Arthur E. Peck, Minneapolis, Minn. Filed June 6th, 1892.

493,289, Attachment for Dental Engines. A. H. Peck and C. E. Allshouse, Chicago, Ill. Filed November 27th, 1891.

493,318, Artificial Tooth. Joshua M. Twilley, Dover, Del. Filed January 12th, 1893.

493,379, Dental Chair. Aaron P. Gould, Canton, Ohio. Filed March 16th, 1889.

493,431, Electric Motor for Dental Work. Jeremiah Keller, Canton, Ohio. Filed June 6th, 1892.

493,528, Box for Tooth Powder. Warren A. Spalding, New Haven, Conn. Filed July 18th, 1892.

493,723, Dental Appliance for Obtunding Nerves. William P. Horton, Jr., Cleveland, Ohio, assignor of one-half to Ansel B. Jones, same place. Filed August 18th, 1892.

493,800, Dental Plate. John R. Watson, Smithfield, Pa. Filed October 7th, 1890.

493,843, Dental Plate. Johannes A. A. Schoondermark, Leeuwarden, Netherlands. Filed July 5th, 1892.

493,846, Dental Boring Apparatus. J. Weber and Hugo Hampel, Berlin, Germany, assignors of one-half to J. Davidsohn. Filed January 4th, 1892. Patented in Germany, March 4th, 1891.

493,893, Dental-Disk Holder. Newton Morgan, Springfield, Mass. Filed December 19th, 1892.

494,065, Artificial Tooth-Plate. Gustav A. Juterbock, Berlin, Germany, assignor to Carl Otto Juterbock, Penge, England. Filed December 21st, 1892.

Trade-Marks. 22,542, Dentifrice. The S. S. White Dental Company, Philadelphia, Pa. Filed February 2nd, 1893. Essential feature the word "Savonola."

22,544, Tooth-Powder. The Reliance Manufacturing Company, New York, N. Y. Filed February 1st, 1893.

## DENTAL LAW OF WYOMING.

SECTION 1. It shall be unlawful for any person to practice dentistry or dental surgery in the State of Wyoming without first having received a diploma from a reputable Dental College or University, duly incorporated or established under the laws of some one of the United States or some foreign government, which is recognized as such by the National Association of Dental Examiners: *Provided*, that nothing in section one of this Act shall apply to any *bona fide* practitioner of dentistry or dental surgery in this State at the time of the passage of this Act; *And provided*, that nothing in this Act shall be so construed as to prevent physicians or surgeons from extracting teeth.

SEC. 2. Every person who shall hereafter engage in the practice of dentistry or dental surgery in this State, shall file a copy of his or her diploma with the County Clerk of the county in which he or she resides, which copy shall be sworn to by the party filing the same, and the Clerk shall give a certificate with the seal of the county attached thereto, to such party filing the copy of his or her diploma, and shall file or register the name of the person, the date of filing, and the nature of the instrument, in a book to be kept by him for that purpose.

SEC. 3. Every *bona fide* practitioner of dentistry or dental surgery residing in this State at the time of the passage of this Act, and desiring to continue the same, shall, within sixty days after the passage of this Act, file an affidavit of said facts as to the length of time he or she has practiced in this State, with the County Clerk of the county in which he or she resides, and the said Clerk shall register the name of and give a certificate to the party filing the affidavit, in like manner and of like effect as hereinbefore provided.

SEC. 4. All certificates issued under the provisions of this Act shall be *prima facie* evidence of the right of the holder to practice under this Act.

SEC. 5. Every person violating the provisions of this Act shall, on conviction thereof, be deemed guilty of a misdemeanor, and be punished by a fine of not less than fifty dollars, nor more than two hundred dollars, for each and every offense, or be imprisoned in the county jail for sixty days, or both fine and imprisonment, at the discretion of the court, and all fines collected shall belong to and be paid into the common school funds of the county where the offense was committed.

SEC. 6. Any person who shall have filed his or her affidavit or

diploma, as required in sections two and three of this Act, in one county and remove to another county, shall, before entering on the practice of his or her profession in such last named county, procure a certified copy of the record of his or her former registry, and cause such transcript to be filed and recorded in the dental register of such county in which he or she has removed.

SEC. 7. This Act shall take effect and be in force from and after its passage.

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#### DR. WALKER FETED IN PARIS.

Dr. Walker, President of the Committee of Organization of the Dental Congress in Chicago, and who is to visit Germany, France, and England in the interest of that organization, has been tendered a banquet by the editorial staff of the *Revue Internationale d'Odontologie* at the *café Riche*, Paris.

After toasts, Dr. Paul Dubois, ex-President of the Odontological Society, of Paris, thus addressed the distinguished guest:

The staff of the *Revue* is happy to receive the President of the Committee of Organization of the Dental Congress of Chicago. The dentists of France watch the preparations for that grand reunion with an attentive eye, and have decided to participate in it by communications and the presence of some of their members.

We will find ourselves with pleasure and interest in the midst of our American colleagues, whose rôle of initiators of modern dentistry has been so preponderant. They have served us as examples, and we will endeavor to show our rivals that France has its share in the perfection of the dental art, and that it is working with some particular qualities for the advancement of the science of odontology.

I drink to the success of the Dental Congress of Chicago.

Dr. Walker assured all those present that the organizers will be pleased to receive the members of the French delegation, which they hope will be as numerous as possible, with fraternal hospitality.

The company separated in the best of spirits, several promising to continue the conversation in Chicago.

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Dr. Hugenschmidt reports a case of alveolar implantation of two teeth, which he has preserved in alcohol for thirty years. A remarkable change in those teeth was that the roots turned black, still he used them, because he could not get suited by any artificial teeth he could find. He should have come to The Wilmington Dental Depot, instead of going to so much trouble, and fail in the end.

## CAPPING TEETH.

*Dr. S. F. Gilmore.*

A gentleman whose upper molars and second bicuspids were gone, called to consult me in regard to the eight remaining anterior teeth. I found them worn down about three-thirty-seconds of an inch, and very sensitive. I repaired them as follows:

With a retaining point drill I made a hole on each side of the pulp in the cuspids and incisors, and about one-quarter of an inch deep. A piece of 24 karat plate was burnished to fit the worn and irregular surface of the tooth. The position of the holes showing in the gold, a pointed instrument was forced through, and pins made of platinum wire long enough to project a little were inserted.

The gold remaining in place, a piece of stiff wax was made to adhere, and trimmed to exactly represent the tip to be supplied. This was removed with the gold and invested in Teague's Compound, gold down; the investment covering the wax up to the cutting edges. Melting out the wax I fused the plate scrap in mold till it was a little more than full, and while it was in a molten state pressed it quickly with the blade of a spatula. This caused it to take the exact shape of the wax model. With but little dressing it was a perfect tip. I prepared six of these, and for the bicuspids I made shell crowns.

Placing each piece and the crowns in position I took an impression, and transferred them to a plaster and asbestos model. With 20 karat solder I tacked them all together on the palatine surface. The piece was set with gutta-percha, so far it seems perfect. The work looks as though it had been built up in the usual manner, and it took but five hours to do it.

## USEFUL HINTS.

*Dr. William H. Steele.*

To MAKE ARTICULATING PAPER.—Of course this is a cheap article, and will hardly pay one to make it for the money saved; but occasionally we get caught when it is needed, and we have not the time to order. For black paper, use finest lamp black mixed with refined unsalted lard, to which has been added (for flavoring) a few drops of oil of gaultheria. This colored paste is to be thoroughly rubbed in to the paper with a piece of white flannel. After enough color has been absorbed, take a piece of *clean*

*white* flannel and rub till all color ceases to come off. "Copying tissue" makes a nice paper for the purpose. If medium tough paper is treated as above it is very useful for making duplicate copies of orders, letters, etc. The sheets of colored paper being placed between sheets of fine linen writing paper, and written on with a hard lead pencil, gives two or three copies at one writing.

**ARTICULATING PASTE.**—This can be made by using the same colors as in making the paper; the colors being rubbed up with lanolin instead of lard.

**LABORATORY PADS AND HOLDERS.**—Pads and holders that are non-conducting and will not scorch are very convenient when soldering, baking, etc. These can be easily made by any dentist at a cost of a few cents each. Procure at the plumbers some asbestos paper, such as is used for covering hot-air pipes; get some of each, the thinnest and thickest grades, use the thin for making holders and thick for bench pads, the latter to protect the bench from hot flasks, soldering, etc. Cut the paper into sizes and shapes desired; now lay these pieces on some heavy flannel; cut out the pieces of flannel one inch larger on all sides than the asbestos; turn the edges up over the paper and stitch fast. In using these always have the asbestos side of the holder or pad next to the hot surface.

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#### WHISKERS AND DENTAL NEURALGIA.

Dr. Jakalsky gathered some curious statistics on the above question from fifty-three subjects, all in evident good health, employed on the railroad of Lyon, which was in the course of construction (1849), who had their whiskers cut about the same time. All of them experienced, after taking off beard and mustache, a painful sensation of cold in the exposed parts, but fourteen of them soon got accustomed to the impressions of the air and suffered no damage from change of habits. The others were less fortunate. Thus he has counted twenty-seven cases of toothache, among which were eleven cases of dental and facial neuralgias; sixteen gingival fluxions, with or without abscess; thirteen dental caries of ancient date, which were evidently accelerated by the abrasion. The neuralgias were very hard to cure, two of them only succumbing after the beard was restored. The most frequent disease after tooth-ache was the nasal catarrh, simple or complicated by irritation of the throat.

## THE ST. LOUIS DENTAL SOCIETY CLINICS OF 1893.

The clinics will long be remembered as the largest and most successful meeting of dentists ever held west of the Mississippi.

There were representatives from Ohio, Illinois, Iowa, Kansas, and Missouri. It was a fine body of enthusiastic men.

Everything indicated that the Western men were abreast the profession and the times.

Electricity in driving the burs, doing the malleting, drying root canals and lighting up the oral cavity.

The latest chair, the "Columbia," was greatly admired, the agent taking a number of orders; the same may be said of the "Hollingsworth Crown- and Bridge-work Outfit." The "Detroit Furnace," also the "Mason Suspension Engine and Combined Reverse Attachment and Speed Regulator." The "Atwood" and "Weston" alternating current motors were in operation. The following is the program as carried out, there being but few failures to appear of those who had promised to clinic; the failures were unavoidable and not intentional, as is sometimes the case.

The clinics were on March 15th, 16th, and 17th.

## FIRST DAY—WEDNESDAY, MARCH 15TH.

Dr. J. G. Harper, Demonstrating Use of Physics Forceps.

Dr. J. G. Pfaff, Compound Gold Filling.

Dr. W. M. Carter, Use of Cement in Starting Gold Filling.

Dr. J. C. Goodrich, Neat and Useful Appliance in Gold Fillings.

Dr. W. M. Bartlett, Gold Plate—Rimmed and Wired.

Dr. H. F. Cassell, Rubber Plate—Plain Teeth—Wax Carving.

Dr. C. J. Tibbets, Using Tibbets' Electrical Appliance.

Dr. J. B. Newby, St. Louis, Mo., Gold Filling—Using Matrix.

Dr. P. H. Morrison, St. Louis, Mo., Gold Filling.

Dr. P. H. Eisloeffel, Porcelain Face Crown—Gold Backing.

Dr. W. G. Cox, St. Louis, Mo., Logan Crown with Gold Band.

Dr. F. F. Fletcher, Gold Filling with Pneumatic Mallet.

Dr. J. E. Grosheider, Bridge Incisors and Cuspids.

Dr. H. M. Baird, Porcelain Crown on Lateral Incisor.

Dr. A. J. Prosser, Composition Gold Filling.

Dr. J. J. R. Patrick, Belleville, Ill., Crown- and the So-called Bridge-work, and a Lecture on the Rationale of Such Work.

Dr. P. F. Helmuth, Pneumatic and Automatic Pluggers.

Dr. J. B. Vernon, Gold Bridge.

Dr. L. A. Young, Filling Lower Bicuspid Post—Tin at Cervix, Finishing with Gold—Hand Pressure.

## SECOND DAY—THURSDAY, MARCH 16TH.

Dr. E. H. Allen, Filling—Bonwill Mallet—Electric Motor.  
 Dr. W. B. Ames, Hardening of Fillings Crystalline Cement.  
 Dr. G. A. McMillen, Expulsion of Pulp by Concussion.  
 Dr. G. A. Bowman, Filling Roots of Teeth with Gutta-percha.  
 Dr. S. C. A. Rubey, Another Use for Copper Amalgam.  
 Dr. A. E. Matteson, Chicago, Ill., Porcelain Crown or Inlay.  
 Dr. J. G. Hollingsworth, New Appliances for Crown-work.  
 Dr. C. L. Hungerford, Kansas City, Mo., Bridge-work.  
 Dr. Garrett Newkirk, Attaching Lateral Incisor Porcelain Crown to Cuspid Tooth, using Tubular Posts.  
 Dr. H. H. Keith, Porcelain Crown-work with Detroit Furnace.  
 Dr. E. E. Shattuck, Painless Devitalization of Pulp.  
 Dr. W. M. Bartlett, Porcelain Crown—Tight Joint.  
 Dr. O. W. Bedell, Infirmary Instruction.  
 Dr. J. W. Wick, St. Louis, Mo., Gold Filling.

## THIRD DAY—FRIDAY, MARCH 17TH.

Dr. J. B. Newby, Use of Canal Dryer and Hot-Air Chip Blower.  
 Dr. W. O. Kulp, Davenport, Iowa, Art Technic.  
 Dr. A. W. Harlan, Treatment of Recession of the Gums.  
 Dr. J. G. Reid, Filling First Molars with Crystalloid Gold.  
 Dr. Carl T. Gramme, Root Filling by Electricity.  
 Dr. Emma E. Chase, Regulating, Showing Result.  
 Dr. H. S. Lowry, A Method of Contouring Gold Crowns.  
 Dr. B. Q. Stevens, Removing Pulp and Immediate Root Filling.  
 Dr. A. D. Penny, Crystal Mat Gold Filling.  
 Dr. K. B. Davis, Filling in Proximal Cavity—Tin and Gold.  
 Dr. J. Campbell, Proximal Cavity with Pneumatic Plugger.  
 Dr. W. J. Brady, Angle's Regulating Appliances.  
 Dr. J. W. Carmany, Using Bonwill Improved Mechanical Mallet.  
 Dr. I. A. Freeman, Gold Filling—Proximal Surface.  
 Dr. E. B. Crane, Experiments with Crane Vulcanizer.  
 Dr. J. W. Wick, Using Matrix in Gold Filling.  
 Dr. George Robitoy, St. Louis, Mo., Replanting.

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The late Dr. W. F. Rehfuss, of Philadelphia, author of "Dental Jurisprudence" and "Diseases of the Mouth," which appear in ITEMS, has received some favorable notices for his method of massage applied to dental therapeutics, on the pages of the *Zahn-technische Reform*, which are reproduced by *L'Odontologie*.

## CHEMISTRY OF CREATION.

*W. B. Mc Vey, Pharmaceutical Chemist.*

(Assistant Professor of Chemistry and Physics, at Boston Dental College.)

Our world may not incorrectly be compared to a large library, in which each rock, plant, and animal represents a volume elaborately composed by the Divine author. As each book is made up of sentences, which is in turn made up of words, and these of individual letters, so in nature we find the matter of which plants and animals are composed may be resolved into seventy or seventy-five letters or elements.

But other agents besides matter are concerned in the physical phenomena of the world around us. All matter seems to be associated with force. But these forces are so silent we often fail to observe them. Thus heat, when sufficiently intense, gives light, and chemical affinity gives rise to light, heat, and electricity.

Science favors the supposition that our earth and whole solar system are but one of the members of the great family which occupy the universe, so that these distant creations would not effect or disturb our astronomical relation.

It is the province of chemistry and science to roll back the history of this planet, and unfold the vast pages of the ages. We should thus discover the methods and laws by which the process of the creation was carried out. Science, as well as revelation, points to a beginning. Geology points to a time when man did not inhabit the earth; and so too of the lower organisms, rocks, minerals, and the round world itself.

That our world, and the system of which it is part, has existed for unknown ages all science testifies; and revelation tells us that it was without form, and void. Therefore, we conclude that the beginning to which science and revelation point, was a period when our world had no being as such; to a time when its atoms had not been brought together; to a time when it existed merely as floating vapor; the laws of gravitation not having yet arranged its atoms, and the laws of chemistry not having united the elements of which it is composed; in a word, to a period when it was without form, and when darkness was over the abyss in which it lay. The earth, sun, moon, and stars were not at this time created. The materials of which they are composed floated through space, utterly inactive and dark.

Let us then consider what would be the effects of calling these forces into action, by the Divine Creator.

This carries us back in our imagination to that beginning when the heavens and earth had just been created, when, as yet, there was no moon, sun, or stars, nothing but a vast abyss, thinly composed of ultimate atoms of matter. The whole universe of worlds was enveloped in darkness, compared with which the gloom of the darkest night is but a cloudy day. There would be no motion, no heat, no sound, no life, nothing but dead matter.

But now the command of the Almighty is given, "Let there be light," and instantly throughout the wide expanse is felt the force of new activities; the first morning of creation breaks over all.

Softly at first it would light up the dark corners of the universe. Gradually it would increase, till light, more brilliant than the fiercest tropic noon, exists everywhere. Now by what process could this result be attained? Light may be the result of many different physical agents. Principally that of chemical affinity and mechanical motion. By the Divine command, the atoms throughout the universe at once fall toward each other, and are brought within the sphere of chemical action and combustion. The production of light and heat would be the result. That most of the elements would enter into combination by mere contact is without doubt; as iron and lead when reduced to a fine powder burn when simply poured into the air. As soon as gravity, cohesion, and chemical affinity were set in operation, the atoms would move toward each other and combustion would ensue, and we would have a large number of small masses, which, when cooled, would be held together by cohesion. It is probable that this state of chemical action would go on throughout the whole universe of worlds. We can form but a feeble idea of the amount and intensity of light thus produced.

The following may serve to convey some faint idea of the light of that first day: Ten grains of magnesium wire, burned in air, will give a light which lasts two seconds, and can be seen thirty miles distant. If, then, we take into consideration this single metal, and reflect on the amount of light that would be produced by the combustion of a quantity of it, to say nothing of other ingredients which enter into the composition of the numerous rocks, we can have some idea of the result.

By this means the light of the first day was doubtlessly produced. It was called into being, not by the creation of the sun, but by calling into action physical forces. The small masses produced by the first combustion having in time cooled, darkness would wrap the universe in its gloom, and the first day would come

to a close. A day not of twelve hours, for as yet neither sun, moon, nor stars existed. It was simply a period of darkness and a period of light.

Besides chemical action to produce light and heat, there would be mechanical force, caused by the motion of the particles toward each other. When they thus came together heat would be produced, but not till sufficient matter had accumulated around a definite center would any light be emitted. The distant centers would continue to attract the floating masses, increasing in bulk and power. They would naturally move gently at first, but gradually their velocity would increase, and at length would strike against the central mass with a force sufficient to give light and heat. Faster these falling masses would be attracted, increasing the intensity of light, and then, after a period of which we cannot gain any idea, the second day, with its prospective work, is ushered in.

The physical laws that govern the universe clearly show us, that unless the original matter was equally diffused through space the central sun would acquire a rotary motion, the motion more rapid on its axis as it acquired greater concentration. The centrifugal force would balance the tendency of the exterior portions from falling toward the centre. This would cause a ring to form around the equatorial belt, and at length a sun or star would be separated from the mass. This would remain in space, and as it cooled, its rapidity of rotation would naturally increase. It would also give off secondary suns and stars, and so in descending series the process would go on.

During the first portion of that long day the beams of the central sun would illuminate the universe. As it cooled, fresh suns would separate from it, and from these others, till in the order of creation our earth was formed. Both science and revelation point to this conclusion. Now this newly-formed earth would roll around its parent sun, a molten, luminous mass. At length the moon would separate from it. But at this period neither moon nor sun govern the earth. It must follow then that during this period the atmosphere of the planet was very different from the air we now breathe. The various chemical combinations and the physical forms in which the different elements comprising the earth and its atmosphere would exist, would greatly depend on the temperature.

For some time before the formation of solid matter on the surface of the earth, the atmosphere would probably remain clear just as long as the temperature of the earth was sufficiently high to keep the watery vapor in the form of gas. But with the vapor

it is difficult to calculate how far the sun's rays would penetrate. It is altogether likely that the rays would be entirely shut out, and darkness would envelop the earth, till the water had been precipitated in the form of rain. As the earth gradually cooled, the amount of heat radiated would be no longer able to retain the watery vapor in a gaseous state. Clouds would form, and thus, gradually, night would descend on our globe. The earth might revolve and present its varying surface to the sun, but no rays of light could penetrate that darkness.

Let us consider how intense was the darkness of that night. We have all seen a light, fleecy cloud of steam from a passing locomotive throwing a shadow as black as ink on a green field, and yet what a little water it contained. If liberated it could hardly be noticed. What, then, must have been the darkness of that night when the clouds contained water sufficient to have covered the whole surface of the earth to a depth of four to five miles. As the earth cooled, the clouds precipitated their moisture on the earth in the form of rain, and what a fearful rain it must have been. The deluge was but a shower compared with the torrents of that awful night. Year after year the rain no doubt fell in floods, and as it touched the heated earth it passed back in clouds again with explosive violence. By such sudden cooling the earth would be disturbed and riven into chasms ; and into these the primeval deluge would be poured only to aggravate the throes of the molten earth.

Who can tell the duration of that long night, during which the oceans that now are were distilled, and redistilled, as in a huge alembic ? And yet some would limit all this to twelve hours !

But at length a period arrives when the waters would remain on the surface of the earth ; and as cloud after cloud discharged its burdens the oceans would rise and completely cover the earth. The result of former upheavels would be worn down, and when the last shower had fallen, the sun's rays would light up the earth.

It is probable that the morning of that day rose on an unbroken expanse of water. But such could naturally not last long. The earth's crust was still very thin, and the evaporation would cool it rapidly. It is altogether likely that its contraction would not proceed equally, and upheavels would result. Dry land would soon make its appearance, and the seas be gathered together. On the exposed surfaces of the earth, vegetation would, at this time, begin to cover the elevated land. In that hot and warm air it would mature and decay very quickly.

At last the atmosphere is so far purified and diminished that

day becomes no longer a continuous, visible presence of the sun, but merely an illumination of the globe.

The third day was probably not as bright as the former ones, on account of the heavy and murky atmosphere. From this night onward it is the varying relations of the sun to the earth that produces and regulates day and night.

The darkness preceding the fourth day was probably produced by the rapid evaporation of water, introduced into the heated earth by extensive earthquakes. It is not likely that matter settled down into the quiet state, as it is now, without fearful convulsions. The night produced would no doubt be short, the vapor would be precipitated, and light would again enliven the face of the earth, while the descent of water would wash and purify the air and fit it for the inhabitants to be introduced on the fifth day.

As the sun contracted and separated from the ring, which afterward formed the planet Venus, the ring would form a cloud of vapor, which would obscure the sun's rays, and night would again settle on our planet. When this ring broke and formed other spheroidal masses, day would again dawn.

Shortly another cloud of vapor would form, similarly as before, and another night would shroud the earth in darkness, which would be dispelled after Mercury had attained a separate existence. At the same time, the physical conditions of the earth and its relation to plant and animal life would undergo a change.

The atmosphere on the fifth day would contain much carbonic acid, and it is known no mammals can exist in it. But fishes and reptiles can exist in an atmosphere far inferior to that required for warm-blooded animals. After Mercury was formed, the sun at length illuminated the morning of the sixth day. The atmosphere would be sufficiently pure for mammals to exist. Toward the close man is called into existence, and the days become reduced to twenty-four hours, determined by the revolution of the earth on its axis.

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A new dental journal, *L'Odontojatria*, appeared in Palermo, Italy, edited by Dr. Giuseppe Impallomeni, of the Faculty of that city. Good luck to our young contemporary.

*The Dental Journal* is the name of a new monthly published by Dental Society of the University of Michigan. A. W. Diack, '92, is editor-in-chief.

## CURRENT THOUGHTS.

### COHESIVE FOIL, AND HOW TO USE IT.

*Prof. S. H. Guilford.*

The benefit conferred by the discovery of the availability of the cohesive property of gold foil in dental operations can scarcely be overestimated, for while the ravages of caries were checked in a very efficient manner by the use of non-cohesive foil, that higher and nobler fulfillment of our art in the perfect restoration of lost tissue could not have been obtained without the advantage of the cohesive property. By the former method, operations could only be performed in simple cavities, and where compound cavities presented, the chisel and file were called into requisition to reduce them to simple ones. In this way not only were the natural forms of the teeth destroyed, but the amount of masticating surface reduced and much discomfort entailed. With the cohesive property of foil intelligently employed, as it is to-day, all these disadvantages are removed and the liability to recurrence of decay greatly lessened.

The history of the development of cohesive gold filling has been similar to that of many other valuable methods and processes. At first its advantages alone were seen, and not only seen but exaggerated. A quality good in itself was naturally supposed to be good under all conditions, and its indiscriminate employment without recognition of its limitations resulted in many failures and brought it into disrepute.

The imperfect method of its manufacture and the unintelligent manner of its employment, due to ignorance of its peculiar properties and inexperience in its use, both combined to bring about the unfortunate results with which its earlier use was attended.

Each year, however, has witnessed improvement in quality as well as better methods and more suitable instruments for its manipulation, so that now there are fewer failures attending its use, and little excuse for those that occur.

Used with an intelligent recognition of its peculiar properties, and under conditions in harmony with them, it has become one of our most useful servants.

In considering its value and availability, it becomes necessary to notice certain practical points, both in regard to its properties and manipulation.

The term cohesive, applied as it usually is in a general way, is

not sufficiently distinctive to describe the different grades of this kind of foil in use to-day. As now manufactured, we have the moderately cohesive, better known as semi-cohesive; the regular or ordinary cohesive; and the extra-cohesive, each differing from the others in important particulars. The former, for instance, would not be sufficiently cohesive to be used on the surface, while the latter would be too intractable to be used anywhere but on the surface or in very large and exposed cavities.

For many years after its introduction, cohesive foil was used in its most cohesive condition; in small cavities as well as large, in inaccessible as well as accessible ones, and at the base as well as the surface. Such use was in a large measure misuse, and the many failures that followed led in time to a better understanding of its limitations. Seeing that failure occurred where it only could occur in a cohesive filling, along the line of contact between gold and tooth substance, especially at the cervical margin, it was suggested, and came to be part of the practice with many, to line some part or all of the walls of the cavity with the more adaptable non-cohesive foil, and restrict the use of the cohesive to the body and surface of the filling. The combination of the two kinds of foil in this way, using each in accordance with its peculiar advantages, resulted in a great improvement in the quality of the work produced.

With but the two kinds of foil, the strictly cohesive and the strictly non-cohesive, to choose between, such combination of the two was wise, and continues to be considered excellent practice. One difficulty attending the method was that of manipulation, for it required considerable skill to combine the two without disturbing their relative positions; while another was that in those cases where it might become necessary, cohesive gold could not be easily added by welding to the non-cohesive.

With the introduction of the semi-cohesive variety an advancement was made, for it possesses the ability to be adapted to any surface as thoroughly and accurately as the non-cohesive, and also to have the quality of cohesiveness imparted to it, when needed, by the application of slight heat. In this way the one variety of gold becomes available for use in place of two varieties.

While the manufacturer to-day produces cohesive foil of a far better quality than he did twenty years ago, it is often defective, because the annealing is too great, thus making the foil less tractable than it should be. For this reason the dentist who makes large use of cohesive foil generally prefers to buy that which is

only slightly cohesive, and to render it more so, when desired, by annealing it himself at the time of using. Experience has shown that the quality of cohesiveness can be imparted to foil more delicately and with a wider range of degree by the dentist than the manufacturer, for he can vary it according to his needs.

There is a point in the process of annealing, well known to the experienced, which gives to the gold sufficient cohesiveness for all purposes without lessening its adaptability, whereas if carried beyond this point its best qualities are impaired. Careful and proper annealing, therefore, is one of the most important considerations in the manipulation of cohesive foil.

The extent to which annealing may be advantageously carried depends on the thickness of the foil and the manner in which it is to be applied. In the heaviest grades of rolled gold intended to be used on or near the surface, or where the entire filling is to be made from it in large and accessible cavities, the gold may be heated to a dull red color, and the greatest degree of cohesion thus imparted to it without interference with its working properties, for it is intended to be laid layer by layer in a comparatively even and regular manner.

With the lighter grades of foil, prepared in the form of twisted ropes or folded ribbons, for use in less exposed cavities and throughout the filling where the same evenness of surface cannot be maintained, so great a degree of annealing would seriously interfere with the proper working of the foil, without conferring any real advantage. It has, therefore, been found best to give to the lighter foil, which is used throughout the body of an ordinary filling, only slight cohesiveness, reserving the greater degree for surface work, where more perfect cohesion is required. The semi-cohesive variety of foil, which does not unite on casual contact, but will allow one surface to glide over another without interference, and which only becomes united under pressure, is the kind best adapted for the main portion of all ordinary or medium-sized fillings. When nearing the surface, the same gold slightly annealed will give to the filling that uniformity of texture and density so necessary to usefulness.

As to the manner of annealing foil, various practices prevail; some passing the foil through or near the naked flame, while others, preferring not to expose the gold thus to the products of combustion, heat it on a tray of metal or mica held over the flame. The latter would seem to be the better way of avoiding over-heating, but experience shows that equally good results follow the use of the

former method, provided proper care be taken. To avoid overheating by this method with the lighter grade of foils, as well as to attain the proper degree of cohesiveness without harshness, the gold should never come in direct contact with the flame, but be passed quickly just above it. There seems to be no preference between the use of alcohol or illuminating gas for annealing, provided the latter is used in connection with a Bunsen burner, affording perfect combustion.

One interesting fact remains to be mentioned in connection with the subject of annealing. For years it has been generally claimed and believed that the so-called strictly non-cohesive variety of gold could not be made cohesive by annealing, but we have recently satisfied ourself by experiment of the fallacy of the idea. Annealing it in an alcohol flame of moderate size does not materially change its quality of non-cohesiveness, but when heated to redness in the large flame of a Bunsen burner its condition becomes so greatly changed that it can be as easily and perfectly welded as cohesive gold. Treated in this way, however, it differs from the ordinary cohesive gold in the fact that pieces coming into slight contact do not cohere, and that mallet force in some form is necessary to bring about the desired union.

Another important feature to be considered is that of the form and character of the points used in the condensation of cohesive foil. If gold is torn or lacerated in the course of introduction, additional labor and time will have to be expended in again bringing the severed portions into absolute union. It is therefore the part of wisdom to avoid such severance. This can only be done by using points with the finest and most delicate serrations on their surface, and that are free from any sharp angles. In addition to this, the face of the instrument should be of such size as to cover considerable surface, and thus avoid piercing the different layers. As we have already shown, cohesion takes place most readily and perfectly when the surfaces of the different layers are brought into absolute contact at all points. This is best accomplished by keeping the surface of the filling as nearly uniformly even as possible, and broad-faced instruments should be used for this purpose.

Instrument points with just sufficient convexity to avoid flatness, and with distinctly rounded edges, will produce better results than any others in welding gold.

Fine serrations, while they are unobjectionable and produce good results in connection with slow malleting, where rapid malleting can be employed, as with the mechanical or electric mallet, even

more perfect results are obtained by the use of smooth points, or those with but the faintest trace of roughness on them. Points of this character, of as large size as can be conveniently employed, used in connection with cohesive gold of any form, will produce a filling so compact and homogeneous that it will never scale or pit, but always preserve the perfect surface given to it at the time of finishing. A filling of this character will have not only the appearance but the essential qualities of a mass of cast gold.

The pitting and scaling of cohesive-foil fillings which have at times filled the heart of the ambitious young operator with dismay, and have been the cause of much of the opprobrium that has been cast on the employment of cohesive gold, are attributable to too great cohesiveness of the gold on to deep serrations and finely pointed instruments, or the use of foil so thin and delicate as to be easily torn and comminuted. Foil of greater tenuity than No. 4, as furnished under the names of corrugated, velvet, and the usual form of Wolrab gold, can only be safely manipulated in mass in the form of cylinders, mats, or rolls, and then only in connection with broad and finely serrated instruments, employed with the greatest care to prevent laceration.

The recent revival of the manufacture and use of the form of gold known as crystal, mat, or plastic gold calls for some notice of this variety before leaving our subject. The use of this form of gold for the filling of teeth dates back thirty or forty years, and has from time to time found much favor with the profession. Its general use has not been continuous like that of foil, but it has periodically claimed attention and received recognition of its value, according as some new process of manufacture or convenience of form has again brought it to the notice of the profession. Gold thus prepared by a chemical decomposition and subsequent deposition, whether by the usual chemical processes or by electrolysis, appears as a brown powder, and consists entirely of a mass of crystals lightly interlocked. When in this condition, unlike crystalline masses of most metals, it is capable of being compressed in a perfectly solid and homogeneous mass without the aid of heat. Its purity, as well as its extreme cohesiveness and softness of texture, were naturally such as to commend it to our use for the filling of teeth. Such being the case, why has it failed to permanently hold its place among the forms of gold in general use? The answer is easily given. The very qualities which made it valuable led to its abuse. The ease with which it could be placed and packed in position, added to its extra cohesiveness, invited carelessness and led to failure.

Each generation of dentists has been fascinated by its attractive qualities, used it to a variable extent, met with failures, and abandoned it, only to have the same course repeated by the generation following. It has always possessed the good qualities attributed to it, and the best results have been and can be obtained with it when its peculiar properties are thoroughly understood, and when experience in its manipulation has led to overcoming the difficulties attending its use. In its loose and cohesive condition it is not only easily comminuted, but it also so readily coheres with similar masses on mere contact that spaces are often unconsciously bridged over by it, and the resulting filling, though seemingly compact and homogeneous, is porous, and hence faulty.

On account of its extreme delicacy and tenderness, success in its use requires that it be most carefully handled and compacted with broad-faced instruments, and that mallet-force for its further condensation be not applied till each piece has been well tamped into position by hand pressure. It is further necessary that each portion be carefully and exactly placed, for once in contact its cohesiveness will prevent even the slightest change.

To manipulate it according to these conditions requires the expenditure of more time and the exercise of greater care than any other form of gold, and for these reasons its use has from time to time been abandoned by the busy practitioner.

In conclusion, we may be allowed to express the opinion that, in spite of its many good qualities, its employment by the unexperienced is always attended with danger.

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#### PRACTICAL POINTS.

*Dr. Henry Barnes.*

Pink gutta-percha is to be found in every well appointed dental office, and is probably used for more purposes than any other one material in our possession. A few are here mentioned: As temporary fillings in cavities already prepared, when want of time or other causes prevents the insertion of a permanent filling; as temporary fillings in large cavities not prepared, to prevent nerve exposure till such time as patient or operator may find time to devote to permanent filling; as a wedge between teeth separated by cotton, rubber or other means to allow inflammation to subside and retain space during the operation of permanent fillings; as a wedge

between teeth, having large spaces from extraction or otherwise, standing next to the one being filled, to distribute the force of the mallet blow, and thus securing to the patient the greatest possible comfort; as a rest under the arm of the Perry separator to secure the instrument from rocking, slipping, etc.; as a separator and rest for the jaws during operations; as cones to force chloro-percha into every portion of the nerve chamber. It may also be used to make small handles for the broach, thus securing a better hold and more perfect manipulation of the broach during nerve extraction, especially when the approach is from the distal surface; also wound around the ends of a ribbon saw and making a secure handle for this instrument; also for separating teeth held on the end of an instrument, and heated to determine the life or death of the dental pulp.

Used as chloro-percha (gutta-percha dissolved in chloroform) to fill root canals and making the most perfect filling for this purpose (universally used) which has yet been brought to our notice; to repair the break in the rubber-dam; to secure remedies, within cavities, when mixed with cotton. We injure our hand or fingers, and at such times, if we immediately suck the wound and wash with bichlorid mercury solution 1-1000, thoroughly dry and smear over with chloro-percha, all danger from infection is removed, and the wound will immediately heal. For filling some of the molars when it is impossible to apply the dam, a band of German silver or other metal secured on the inside with chloro-percha, and then forced over the tooth, will prevent the moisture from interfering with the work; it is also an excellent article to flow over the inside of a cavity when the nerve is nearly exposed and when it is desired to cap with cement.

**AMALGAM.**—To repair a break in a tooth next a gold filling on the lingual surface, also to repair when decay has attacked the tooth at the cervix beneath the filling. In the first place take a little scrap of amalgam already mixed, and which has crystallized, then heat a spatula quite hot and press the amalgam into place; as it quickly becomes hard, no danger is feared for immediate dislodgment. This is especially useful where it would loosen the gold filling if much cutting were done. After thoroughly preparing the cavity, fill as usual. Generally decay will be retarded for years. This is one of the condemned practices of twenty years ago. So our idols are broken.

Fillings at the lingual cervix, and in the lingual pit and groove of the lateral incisors: Take a piece of tin or other metal  $\frac{1}{3}$  inch

wide and long enough to surround the tooth to be filled, fasten the end with thread or other means, pass over the tooth, allowing the metal to slide over the cavity between the gum and tooth, and with a burnisher crowd down and bend over the edge as much as possible. This will expose the cavity to view, and crowd the gum from the tooth, thus allowing of freedom during the operation, and it will also prevent moisture getting into the cavity. A thin coating of chloro-percha applied with a nerve broach will greatly assist in some cases. This method is useful in filling cavities on the distal surface of third molars where the gum has grown over the distal ridge.

**EXTRACTING NERVES.**—It frequently happens that the nerves in the lingual root of upper molars and distal root of lower molars are difficult to extract. I have been using two or three broaches in a bunch for such cases with good results. Have we a prescribed procedure for filling nerve canals?

After arsenic has been in the tooth for three days, I remove the capping and drill into the pulp chamber, and after removing the pulp and nerves, or as much of them as I can, apply oil of cassia on a pledget of cotton and dismiss my patient for a day, then after dressing with peroxid-hydrogen, I use oil of cassia and dry out with very hot air and immediately fill.

**THE USE OF THE SEPARATOR IN FILLING TEETH.**—Perhaps the best of any yet introduced is the Perry. It saves the time of all concerned, and if judiciously used is a boon to our patients. With it there are few cases which can not be separated enough for immediate filling. After the cavities are filled a little more space may be gained, so that natural contour is preserved, and food is not crowded into the V-shaped spaces to the great inconvenience of the patient, and very likely to re-decay at an early day. This is a nice point.

Sand paper discs, if coated with soap, instead of sweet oil or glycerin, will not heat the tooth so quickly as when nothing is used, and gives a more polished surface to the filling.

**THE APPLICATION OF THE RUBBER-DAM.**—I have never been able to understand how anything is gained by using small pieces of rubber-dam. It should be large enough to well cover the mouth, cheeks and chin, so that it may be held and kept out of the way during operations. Many breaks about the necks of the teeth after the dam has been applied is due to punching the holes too near together. They should be punched far enough apart so that the rubber will not be stretched in the interdental spaces, and be sure

to punch enough holes. The ligating is easily done by allowing the thread to extend from tooth to tooth on the lingual side without a single knot. Black carpet thread makes a good ligature, and its color makes it possible to detect any fibers which may have caught on the cervical border of a cavity, especially in deep cavities, splitting the thread and using two strands for teeth closely wedged.

*Ohio Journal.*

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#### GERMICIDES.

*Dr. N. S. Hoff.*

The most useful dental germicides are, bichlorid of mercury, carbolic acid, oil of cassia, and peroxid of hydrogren. The bichlorid of mercury in solutions of from 1 to 100 or 1 to 500; the diluent being distilled water, or peroxid of hydrogen. This is a powerful poison and should be used with caution. It is not known definitely what the chemical reaction is, but mercuric albuminates are formed (indicating decomposition of the bichlorid) and nascent and free chlorin is probably the active agent in the sterilizing process. It may act as a simple poison.

Solutions of carbolic acid in water of sufficient power cannot be made to produce satisfactory germicidal results without using solution of such high concentration that destruction of healthy tissues will follow its use, and most oils with which it will mix readily interfere with its germicidal power. The oil of cassia, however, has been found by Dr. Black to not only maintain but materially increase its range of power. In many cases of dental practice the amount of tissue destroyed by a 95 per cent solution of carbolic acid in water would produce no harmful results, but a solution of such strength is not applicable to pulps or gum tissue where it is important to save all the structure possible. Just what the chemical reaction of carbolic acid and oil of cassia may be we cannot tell, but it is probable that carbolates are formed of the proteid elements, and the liberated hydrogen and oxygen uniting with the putrefactive gases, destructive acids are formed which act directly upon the microorganisms.

The peroxid of hydrogen, the safest of all germicides, though not so efficient as those above mentioned, undoubtedly owes its power to the liberation of the extra and loosely held atom of oxygen, with which it readily parts when brought into contact with substances having an affinity for oxygen. In its therapeutic application as a

disinfectant, it gives up its oxygen to sulphuretted hydrogen H<sub>2</sub>S and ammonia NH<sub>3</sub> to form sulphuric acid and nitrous acid gases which attack and destroy the microörganisms. It is undoubtedly also true that a portion of the oxygen is absorbed by the red corpuscles of the blood and the impaired nutrition of the part reinforced, so that the vital resistance of the tissue cells take a prominent part (by resistance at least), in the sterilizing process.

The disinfecting process, be it never so carefully and systematically accomplished, will leave the enfeebled tissues exposed and susceptible to renewed attack, unless guarded and protected by a faithful watch, which will not interfere with the normal healing process. This duty we assign to the antiseptics.

These drugs may be administered internally to be absorbed into the general circulatory system, and so produce general and local effects, but as is generally the case in dental practice they may be applied locally with the intent to produce an effect on a limited area.

Drugs capable of producing an alkaline or acid condition in the blood (or cause acid or alkaline secretions of glands) would inhibit the development of bacteria, and in this way act as local antiseptics though administered through the general circulatory system.

*Dental Register.*

#### ROOT FILLING.

Root filling is a matter that I have given especial attention to ever since I began dentistry. I think I have tried nearly all the methods, but, in the main, have adhered to one, and this is the use of oxiphosphate. I have not used it invariably, but consider it the best root filling, and especially in cases of putrescent root-canals. I don't think I have had trouble in more than two per cent of the cases that I have thus treated, and where I have had trouble I attributed it more to a faulty operation than to the method employed. To overcome the difficulty of sealing the apical foramen, I employ this method. Assuming that the pulp canal has been thoroughly cleansed, and ventilated for a sufficient length of time to get rid of the products of decomposition, I dry it out with hot air. This is accomplished by taking an ordinary chip-blower and drawing the air through the alcohol- or gas-flame, and inserting the point of the tube into the pulp canal, compressing the bulb at the same time, and then allowing the bulb to expand to draw the air out again. In that way I get my canals very dry, and if I think

there is likely to be trouble in getting the creamy cement up to the apex, I take a piece of orange- or cedar-wood, a little smaller than the nerve canal, and, after working in as much of the cement as I can with the Donaldson nerve-broach, take the splinter of wood and drive it as far up as possible, and there leave it. I never make provision for opening a canal after having filled it; experience teaches me that it is unnecessary. If the root should afterward give trouble, which very rarely happens, I know at once that I have not been thorough in the preliminary details.

I have opened a good many canals that have been filled with gutta percha, and in many instances there has been considerable odor, and in some cases the gutta-percha itself has been in a putrescent condition. But in opening canals filled with the cement, I have noticed an absence of odor, and believe that this substance renders inert any portion of decay that may have eluded my efforts to remove it. Of course, there are many methods of filling canals where the tooth has been devitalized and the pulp immediately removed, but I am speaking particularly of *putrescent* canals and my experience with cement in such cases.

President Brackett: The chair would like to clearly understand whether the last speaker feels justified in introducing this root filling before the odor from the canal has disappeared, and before there is evidence of a general state of health of the investment of the root.

Dr. Allen: I never introduce any root filling till I have made myself reasonably sure that all products of decomposition have been removed. My method is to be as thorough in the first cleansing as possible, using peroxid of hydrogen to a large extent, and hook broaches and other canal cleaners to get out all the loose decayed substance. Then I leave a dressing within the root for from three to five days, saturated sometimes with carbolic acid, sometimes with nothing but peroxid of hydrogen, occasionally listerin, according to the amount of putrescence present. I find that I have occasion to depend less and less on these substances, according as I am thorough in the removal of the decay. I continue this treatment as long as the odor persists, and when there is an absence of odor, I proceed to fill the canal.

Dr. Allen, *in International.*

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The Baltimore College of Dental Surgery had 137 matriculates this year.

## ROOT FILLING.

A patient presented herself to me a few days ago with an upper central which was loose, sore to touch, and had a discharge of pus from its socket. On examination and inquiry I found that the root was supporting a banded crown. It had become fractured some years ago, and had been banded in the hope of maintaining it as a useful member.

Considering it useless to attempt the treatment of a root in such a condition, I extracted it, and, to my surprise, found that the process of banding, instead of bringing the fractured parts more closely together, had forced the apex of the fracture against the alveolus. The apex of the silvered portion has been carried out in forcing on the band.

The history of this tooth is this: At first a crown with a wooden pivot was adjusted, and after being worn for some years the end of the root had become weakened, till it finally fractured; then the root was banded, with the result which you see. You see how easily we may be deceived in similar operations.

In the treatment of fractured roots, I first tie a ligature around the root, bringing the parts closely together; then make an application of compound tincture of benzoin to the inflamed gums, and wait twenty-four to forty-eight hours. As soon as the soreness has sufficiently subsided, I drill a small hole through the fractured portions of the root near the gum and insert a gold screw. If there is a filling, it is replaced with cement, and care is taken that the opposing tooth does not strike the fracture in the act of mastication. The ligature can then be removed. After the parts are held together awhile by the screw and cement, the inflammation ought to entirely subside. The crown or remaining portion can then be removed, or so shaped as to receive a band or cap. This method applies to fractures extending some distance above the gum. If, however, the fracture does not extend too far above the gum, I remove it, and, in fitting the band, cut it so as to completely enclose the space made by the removal of the fractured piece. I recall the case of a young man receiving a blow which fractured a central incisor; the fracture extended fully a quarter of an inch above the gum on the palatal surface, and this space was completely covered with a portion of the gold band. This operation was performed ten years ago, and to-day the parts are in a good and healthy condition, thus showing that the gum-tissue will in many cases admit of the band when properly adjusted.

*Dr. Banfield, in International.*

## SUDDUTH AND DENTAL ETHICS.

We do not generally take notice of cases wherein violation of the code of ethics of a society is a question. But there is being enacted in Minneapolis a farce that is somewhat ludicrous and deserves some notice, especially in view of the fact that our own views on the topic of advertising, the code of ethics and kindred subjects have been materially changed since we have ventured into the publication of a newspaper. The Dental Department of the University of Minnesota, it seems, has received some advertising in the public press of that city. The Minneapolis Dental Society has tried several dentists connected with the school, and all except the Dean, Dr. W. Xavier Sudduth, were exonerated. Last Saturday was set for the trial of the culprit; the following is the report: The proceedings were opened last evening by the placing of Mrs. J. W. Withrow, President Cyrus Northrop, of the State University, and Dr. F. B. Kremer on the witness stand in behalf of the defence, following which Dr. Sudduth took the stand in his own behalf, and, after answering a number of questions, proceeded to a lengthy summing up of his case, in which he explained the incidents relating to the "write up," claiming that he had done nothing wrong and nothing tending to violate the "code of ethics."

He related incidents of "write-ups" of members of the dental profession in daily papers of which nothing was thought, and which did a great deal more "puffing up" than was ever possible to be imagined in the "write-up" of the dental department of the State University.

Dr. Jewett made a motion as follows: "I move to dismiss on the grounds that the charges have not been sustained." The motion was voted down. Then a *coup d'état* was executed. The deputy sheriff pushed the door open and entered the room, pulling the documents out of his pocket, and began to pass them around.

The members viewed the injunction, and were some little time in arriving at a correct conception of the true import of the document. "I move we adjourn," shouted one member, and, without more ado, they adjourned.

Dr. Sudduth explained that the course adopted by him was one to which he had been driven by members of the society, who denied him even the privileges of a criminal at the bar. His professional reputation was all he had, and he proposed to defend it against such slurs—with his life, if need be. The matter would now go into court, and if the court found that the members had acted in

accordance with the law, it would again revert to the society, but if not, it will probably be tried in the courts.

The title of the action is "W. X. Sudduth vs. the Minneapolis Dental Society; E. T. Clark, L. D. Leonard, H. L. Wilkins, constituting the trial board of said society; F. E. Hansen, president of said society, E. H. Angle and other members of the society," and the complaint sets forth the facts already made public, relating to the publication of the article in question; the plaintiff's professional reputation; its value to him and the time spent in acquiring it, and then goes on to relate the incidents of the accusation against Dr. Sudduth and the trial by the society, and on the grounds mentioned. Judge Hicks issued the restraining order, putting a stop to all further procedure with the case till it could be heard in the court.

*Dental-Tribune, April 8.*

### WHAT PRODUCES CARIES?\*

*Dr. Sudduth.*

The fermenting of meat will not produce decay. Putrefaction will not produce decay. Putrefactive changes of meat will not produce decay. You can only have decay of the teeth, as we understand the term "decay," by the action of one acid, and that is lactic acid. Now I have given a great deal of attention to the food habits of different races in regard to this particular point, because it is an interesting one to study; the food habits of races in connection with the prevalence of decay of teeth, noting how the change of diet will affect the quality of the teeth. Now this change in the quality of the teeth depends upon three things: In the first place, it is a matter of heredity. What I mean is inherited disease. You take the prevalence of syphilis in any one race of people, where it has been first introduced into a race or into a country, and you follow down the history of the teeth of those people, and you will find that the children and grandchildren inherit a lack of lime salts in the bones, that is also reflected in the teeth. The teeth of individuals, whose parents or grandparents have suffered from syphilis, are very poor in quality. In studying the effect of syphilis on different people, we have that one thing, the deteriorated condition of the general health reflected in the development of the teeth. There is a lack of good development. There is a lack of assimilation on the part of the individual, and it

\*Read before the California Society.

is shown in the teeth just as well as it is in the bones. It is this condition, called rachitis, which is so common.

A change in food habits affects the teeth. You take all carnivorous animals, those that eat meat almost entirely, and decay is almost unknown. Take a dog, for instance, as a typical example of the carnivorous animal. The character of food that a dog eats is self-cleansing. The teeth are clean and white. This food, if it remains in the mouth, and ferments, as I say, will not produce decay. But take a petted dog, poodles and other dogs, fed on dainties and bonbons, and you will find pyorrhea alveolaris and decay. If that is so in regard to the teeth of animals, it is doubly so in regard to the teeth of men. To those people that live on a purely meat diet, like the North American Indians in early days and the Esquimaux down to the present time, decay was almost unknown. You may examine the skull of the primitive races of the Indians of North America, and decay is almost unknown. As they come under the same environment as Europeans and Americans, decay becomes more and more apparent. Change of diet, then, is one of the things that tend to produce decay.

The result of eating starchy food is that it is converted by fermentation into glucose, and further fermentation produces lactic acid before it is taken into the mouth. Now, we know that acid foods, those foods that are acid when taken into the mouth, never produce decay. They produce erosion of the teeth. Take the grape cure that has been used so extensively in Europe, with its fruit acid, and the use of mineral acids; they do not produce decay, they produce erosion. They roughen the surfaces of the teeth, which are more easily abraded in the process of mastication, so that the teeth wear down more quickly. But unless there is eaten the starch, or the glucose itself, through which fermentation is going on in the mouth, decay is not produced. The principal portion of the diet of the Hawaiians, which is poi, glucose would exist before it is eaten. If they were eating the product as we do, flour and things of that kind, they would have starch taken in the mouth, and the action of the saliva would convert it into glucose, which would then be converted into grape sugar and into lactic acid. The history of all people is, that when they come within the range of civilization, and are dependent on a starch food, decay is more prevalent than it was before. It is common in the East with the servant girls who come from Europe, that after they have been in this country six months or so their teeth begin to decay. It has nothing to do with the change of condition other than as it is

affected by the change of diet. A large portion of those servant girls that come from Sweden, Norway, Germany, and Ireland come from the farms. They go into the kitchens of our American homes, and there their diet is changed from the self-cleansing, coarse food, which is not starchy and sticky like the food that is prepared in American homes. The results are seen very quickly. Decay sets in and the teeth are broken down. If they developed the same habits of cleanliness that American children are brought up with, and kept their teeth clean, they would not have as much decay as they have; but a toothbrush among the peasants of Europe is an unknown quantity, and they lose their teeth in this country before they learn what a toothbrush is for.

Fermentation is constant in the mouth whenever starch is present. We want to distinguish between erosion and decay. Erosion may be caused by general acidity of the saliva, but decay and death, as we understand the term, is the result of fermentation

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#### NEW DENTAL LAW IN FRANCE.

SECTION 2. None can exercise the profession of dentistry who is not provided with a diploma of a doctor of medicine, or that of a dental surgeon. The diploma of a dental surgeon will be given by the French government to those who have pursued a course of studies organized in accordance with the regulations of the Superior Council of Public Instruction, after examination before a Superior State Medical Institution.

SEC. 5. Physicians, dentists, and midwives obtaining their diplomas in foreign lands, whatever their nationality, cannot exercise their profession in France, unless they obtain their respective diplomas according to above provisions.

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COCAIN IN DENTISTRY.—Having employed cocaine largely for a considerable time, I have to say that I cannot recall a single failure. The way I have employed it is by using a freshly-prepared 10 per cent solution. Some recommend the addition of a 1 per cent solution of borax. By first lancing the gum and applying the solution of cocaine on cotton to the bleeding gum, and allowing this to remain a little while, the extraction will, in nine cases out of ten, be painless. The only thing against it, is the price.

*The British and Colonial Druggist.*

## ITEMS.

Dr. C. J. Tibbetts, Quincy, Ill., gives a spring temper to jewelers' broaches by dipping them into melted lead, keeping them there till as hot as the lead and instantly plunging them into hot water.

\* \* \*

Dr. Genese criticises Dr. Rollin's advocacy of vermillion in gutta-percha for teeth. I agree with Dr. Genese in all he says, excepting when he gives the chemical composition of vermillion as an oxid of mercury. Vermillion is, I believe, a sulphid or sulphuret of mercury.

*E. H. Babcock.*

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To clean and brighten impression trays place them in a vessel of water, to which has been added several tablespoonfuls of "Pyle's Pearlin," and boil for a few minutes. While hot rub dry with a rough towel, and the trays will be as clean and bright as when new.

*R. B. Foster.*

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**MICROBES ATTACK BANK NOTES.**—Analysis showed the presence of large numbers of microbes on notes that had been for a long time in use, and on two notes, Drs. Acosta and Rossi calculated that there were upwards of nineteen thousand. One species proved rapidly fatal to animals inoculated with it.

*Chronica Medico-Chirurgie de la Habana.*

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An experiment which may prove to be of great value in surgical operations has recently been performed. Local anesthesia has been obtained by electrical means. Theorists have prophesied this result for some time past, but till recently no proof of its accomplishment has been shown in practice. A Providence physician, by the aid of a carefully constructed electrical apparatus, has produced local absence of sensibility on a patient suffering from a felon on his forefinger sufficient to allow incising the felon without pain. By it in tic-doloreux, an anesthetic effect produced cessation of pain in ten minutes, after which the patient enjoyed sleep for the first time in two days.

*New York World.*

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At a banquet connected with a Dental Convention, to one speaker was assigned "The Dignity and Utility of our Profession." This was his response:

Ladies and gentlemen, suppose that to-morrow in every business, professional, political, or social sphere, all who have false teeth, from one to a full set, should appear without them! Suppose that all fillings should drop out to-night, and every nerve be exposed to hot and cold, sweet and sour! Then, and not till then, could we measure the utility or conceive the dignity of our profession.

Great was the applause and laughter. Then said he: "Your smiles and open mouths reward me and illustrate my theme," and sat down.

*Christian Advocate.*

\* \* \*

Competition rightly directed is the life of trade, but when used as a pretext for unfair dealing it degrades the business and the man. We admire the man whose courage leads him to strive with all his nature to bring out some article that will command the attention of buyers, and thus become a competitor of a formidable character, but we hold in contempt him who waits until he discovers something that is sure to become popular, and then appropriates it regardless of the rights of others. It may be cheaper for him to copy than to originate, but is it honorable? And yet we find men who are always ready to denounce others for what they assume to be a wrong, while they themselves are making greater efforts to copy the products of others than they are to originate new ideas, and because of this it is safe to affirm that not more than one manufacturer in twenty-five is anything more than a copyist, and the twenty-four engage in a competition that is unjust toward the one who had the courage and skill to lead. It is this kind of competition that is destructive to prices, and which leads to the discarding of good ideas which might have resulted to great good had they not been tortured into being what they were not originally.

*The Hub.*

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The prevention of disease, more than the cure, should be the great aim of the medical art. So in the practice of dentistry, it should be our ambition to see teeth preserved in a healthy condition, more than to show skill in repairing or replacing them.

Said the venerable President of the Medico-Chirurgical Society, of London, once: "I verily believe if all the physicians and surgeons, and midwives, and druggists, and drugs were hurled from the face of the earth, there would be less mortality, and less disease among the people." Not that he did not believe in good doctors, but because there were so many poor doctors.

Let us hope that this can never be truthfully said of our profession.

# INTERNATIONAL REVIEW.

*By George Randorf.*

## ECHOES OF THE 18th CONGRESS OF EUROPEAN DENTISTS.

### I.

#### PHOTO ELECTRIC MICROSCOPE.

Dr. Gysi, of Zurich, had prepared a series of projections on a photo-electric microscope. The preparations which were thus placed before the eyes of the congressists represented with the greatest neatness the various normal tissues of the teeth: enamel, dentine, cement, nervous fibres and capillary vessels of the pulp, odontoblastic cells, etc., as well as the pathological modifications wrought on these tissues by caries, exostosis, pulpitis, pulpare nodules and secondary dentine, transparent zone of caries, etc.

Besides Dr. Gysi circulated a collection of micro-photographs, which were the object of general admiration.

### II.

#### PATIENTS AND PATIENCE.

An interesting paper was that by Dr. Elliott, of Florence, Italy. Patients and patience are ethymologically alike and cannot be separated. One may say that it is always necessary to have one in order to have the other. Says the doctor:

What to say of those patients who have the bad habit of missing their appointments or coming so late as to disorganize the rest of a day whose very minutes are often counted. To make them pay for the time that they make you lose, would be good in itself, but is not necessary to find the time to finish the work which was put off, and perhaps take for that the hours consecrated to a well earned repose.

Or those coming to the practitioner with a well set resolution to obstruct him in all he would undertake. Or hurling questions at or discussing your methods and seeking to impose upon you their ideas and crankisms. My salvation is in a good *dam* to their eloquence, which brings marvelous results.

There are other kinds of impatient patients, but as Dr. Elliott fails to offer us a telling remedy, we must continue to arm ourselves with resignation and philosophy.

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USE OF ELECTRICITY IN DENTISTRY.—The application of electro-therapeutics in dental practice has been followed by so many

successful results, that Professor J. Foulon, of Paris, has felt it his duty to make public his system in the *Revue Intern. d'Odontologie*. The results of electro-therapeutic treatment in medicine and surgery has led the professor to try it also in the domain of dentistry.

Outside of some applications which are common to other professions, the one which is original with dentistry is the employment of a steady current in the treatment of teeth affected with caries in the fourth degree.

Again in reflex neuralgias of dental origin, electricity offers a powerful means of action, not only to still, but to subdue them promptly and effectually.

In cases of syncope, hysterics, epileptic fits, and some of the other post-operating accidents, the application of electricity was found to give the most satisfactory results.

As to the handling of the electric apparatus, etc., the professor says that the study of the subject is neither long nor difficult, and any conscientious practitioner of ordinary intelligence can easily gain the desired knowledge, and deduct its logical and practical applications.

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### TARTAR.

Prof. P. Dubois, of Paris, gives in the same magazine a few interesting points on tartar.

*Definition.*—Stony deposit precipitated from the saliva and gathered on the neck of the teeth, preferably in certain regions:

1. On the lingual surface of the inferior maxilla.
2. On the anterior labial surface.
3. On the external side of the large superior molars.
4. On the teeth which do not participate in mastication.

It is rarely missing on the first point, while in the others it is often absent.

*Composition.*—Tartar of recent origin is soft, little adherent, and is easily removed with an instrument; when of long standing, it is hard, compact, and adheres to the teeth so firmly as to be detached only in scales. It changes neither the enamel nor the dentine.

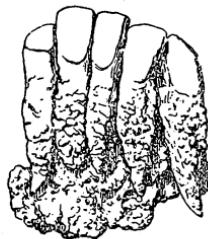
The chemical composition is different in individuals, according to age of life, the regions of the mouth attacked, etc. Analytical researches have demonstrated that tartar contains from seventy-two to eighty parts of earthy salts; that phosphate of lime is a principal element in it (nearly 65 per cent), carbonate of lime representing eight to nine parts; and, lastly, that it contains in small

quantities phosphate of magnesia, iron, silica, and fluorids. Organic matter forms one-quarter.

*Etiology.*—The deposition of tartar depends in the first place on the chemical composition of the saliva; then on the liquid buccal reaction; and, lastly, on the more or less rough state of the teeth, the facility and frequency of their washing, and also on the attrition from food.

As Prof. Magitot puts it :

The deposit of tartar results from a single deposit by precipitation of phosphates and earthy carbonates, kept in dissolution in the saliva, in favor of the organic matter with which they are combined.



The above illustration, reproducing a piece in the museum of the Dental School of Paris, shows a block of five teeth soldered by a mass of tartar and fallen out with it.

*Treatment.*—It must be said from the start that the removal of tartar depends almost exclusively on mechanical means. The instruments must be very fine and small, possessing at the same time certain rigidity. No place, however remote and obscure, should be left uncleansed, as the smallest particle of tartar left will at once become a new center of crystallization favoring the subsequent deposition of the salivary salts.

The blood or saliva can cover tartaric deposits, and frequent rinsings and irrigations are indispensable, in order to discover deeply located fragments. The repeated irrigation of three small quantities of oxygenized water facilitates the detachment of tartar. Green tartar is difficult to detach, and addition of tincture of iodin to the powder has very fortunate effects.

Caoutchouc disks and circular brushes can be used for polishing after the removal of the tartar, by means of steel instruments.

The ulterior deposit of tartar must be combatted by attentive hygiene. If it depends on a general bad constitution, the patient will be directed to a physician; if it is connected with gingival disorders, the treatment must be as above.

## THE PHOSPHOR NECROSIS.

The phosphor necrosis, says Prof. Naumann, in *Zahnärztliches Wochenblatt*, is a disease connected with the production of phosphorous matches. The access of the phosphorous vapors to the periosteum seems to be afforded by carious teeth, and workmen with bad teeth have contracted the disease three times as often as those having sound teeth.

Usually the disease begins with toothache; an alveolar abscess is then developed, resulting in periostitis, with strong exudation of pus. The gums become swollen and abscesses are formed, whose rancid pus contains pieces of bone. The teeth fall out, the bone is deprived of the soft parts, and often shows a raw surface. General indisposition, loss of appetite, severe pains and fever bring about such debility in the patients that they soon succumb to it, if death does not occur even before through septic infection, waxy degeneration, inflammation of the kidneys, pneumonia, or the transportation of the process to the base of the skull. The favorable course is accompanied by the expulsion of the necrosed bone, whose dissolution occurs only after many years.

The prognosis is more favorable when the necrosis attacks the superior maxilla, because the abscesses forming there can find an easier outflow. The formation of the abscesses beyond the margo infraorbitalis is a sign that the process has reached the base of the skull.

The first prophylactic measure (turpentin, use of white phosphorus) proving of no effect, the chief care is then as to cleanliness; forbidding to eat in the factory rooms; change of clothes; medical examination of employés, especially with reference to carious teeth; prohibition of home industry.

The therapy must aim next, at the appearance of the first symptoms, to exclude the occupation with phosphor. For the first stage, cold applications, bleeding, and antiseptic mouth washes are advisable. Then the lancing of the abscesses may be proceeded with. In the later stages it is necessary to remove the necrotic bone piece by operation, on which point opinions differ as to early or late operations. Against late operations it is argued the general condition of the patient suffers too much if we wait till the complete dissolution of the sequester, and a portion of the new bone formation is again destroyed. On the other hand, it is objected to early operations, that the new formation of bone is not sufficient; that only a fibrous ring is formed instead of the sequester, which brings about functional disturbance and destruction.

In observing the pathological and anatomical processes, we find periostitis with exudation. The latter is first serous, then pus-like, and lifts the periosteum from the bone, and thus leads to formation of abscesses, and at the same time also to osteophyte. The resulting alimentary disturbance has for its consequence the death of the bone and the formation of the sequester.

The author concludes with a description of a case of a patient, thirty-two years old, who had undergone an operation of the inferior maxilla for phosphorous necrosis four years before, and who, on taking to her former occupation, has again contracted the disease, this time in the superior maxilla. The operation took place April 27th; both halves of the face were much swollen; the gums were covered with a rancid pus; pus exuded on pressure from the space between the gum and the loose teeth. The alveolar process of the right upper maxilla was extracted with a bone forceps. Though the general condition was good at the beginning of the operation, the exudation of pus toward the end was still very strong. On June 6th a fluctuating tumor appeared on the infraorbital ridge of the right eye, which, being lanced two days later, exuded plenty of rancid pus. June 6th, collapse and death.

The head was preserved in alcohol, and an examination showed no new formation of bone in place of the removed portion from the inferior maxilla. The supposition that the abscess on the margo infraorbitalis points to the formation of basilar meningitis has been substantiated. This basilar meningitis must have been the cause of death.

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#### ARISTOTLE ON TEETH.

The student of dental science naturally expects to learn from that great teacher, so aptly called "the eternal prince of all true thinkers," what science really did possess up to his time, *i. e.*, the fourth century before the present era. The teeth form a subject of one of his essays, and I reproduce here the most interesting portion of it, in the form of questions and answers.

Q. Why do the teeth only, among all other bones, experience the sense of feeling?

A. That they may discern heat and cold, that hurt them, which other bones need not.

Q. Why do the teeth grow to the end of our life, and not the other bones?

A. Because otherwise they would be consumed with chewing and grinding.

Q. Why do the foreteeth grow soonest?

A. Because we want them sooner in cutting than the others in chewing.

Q. Why do the teeth grow black in human creatures in their old age?

A. It is occasioned by the corruption of the meat, and the corruption of phlegm, with a choleric humor.

Q. Why did nature give living creatures teeth?

A. To some to fight with, and for defense of their lives, as unto wolves and bats; unto some to eat with, as unto horses; unto some for the forming of voice, as unto men.

Q. Why do horned beasts *want* their upper teeth?

A. Horns and teeth are caused by the same matter, that is, nutrimental humidity, and therefore the matter which passes into horns turns not into teeth, consequently they want the upper teeth; and beasts cannot chew well; therefore, to supply the want of teeth, they have two stomachs, from whence it returns, and they chew it again; then it goes into the other to be discharged.

Q. Why are some creatures brought forth with teeth, as kids and lambs; and some without, as men?

A. Nature does not want unnecessary things, nor abound in superfluous; and therefore because these beasts, not long after they are fallen, do need teeth, they are fallen with teeth; but men, being nourished by their mother, for a long time, do not stand in need of teeth.

## SAYINGS ABOUT TEETH.

### CHINESE.

The tongue which is yielding endures; the teeth which are stubborn perish.

### LATIN.

The toothless man envies those that can bite well.

### ITALIAN.

He who has teeth has no bread, and he who has bread has no teeth.

### FRENCH.

Some have bread who have no teeth left.

### SPANISH.

When the child cuts its teeth death is on the watch.

A mouth without teeth is like a mill without a stone.

A diamond is not so precious as a tooth.

### RUSSIAN.

Who has aching teeth has ill tenants.

If you cannot bite, never show your teeth.

Better a tooth out than always aching.

The tooth often bites the tongue, and yet they keep together.

## DR. L. THOMAS.

The French dental magazines bring the sad news of the death of one of the brightest lights in the dental profession of Europe, Prof. L. Thomas, of the Dental School of Paris. Death occurred unexpectedly, while the deceased was taking a walk in the company of an intimate friend, Sunday, February 5th. He was only forty-seven years old.

Prof. Thomas has rendered great service to the science of dentistry by his numerous learned contributions, his latest being an elaborate treatise on "The Real Importance of the Geographical Distribution of Dental Caries in Ethnography," which was mentioned in the ITEMS OF INTEREST some time ago. He was the author and organizer of the system of dental teaching in France.

The great *savant* had many admirers and sympathizers outside the circles of the dental faculty and dental students, and those that came to pay honor to his earthly remains included representatives of other branches of learning as well. An eloquent tribute was paid to the distinguished scholar so prematurely snatched from science, by Dr. Hahn, in the name of the Medical Faculty. The essential qualities of the deceased, his official labors, his private virtues, his great modesty, and finally his passionate attachment by which he was animated toward the Dental School of Paris, to which he was so deeply devoted, was recalled by Prof. Poinsot.

That incomparable student and patriot has keenly felt that the schism in this school, by which eight illustrious professors have been alienated, has passed through his heart, leaving it unhealed. His dying hour might have been sweetened by the intelligence that his conscientious efforts at a reconciliation have born fruit, and that the great Dental School of Paris is again a united body, served by the most eminent men of the profession, and thus better able to serve the interests of dental science and art, as well as the greater fame of France and the higher claims of humanity.

May the memory of the varied virtues of that great man, so freely given to the service of humanity, continue long to inspire others to do likewise, taking the lesson of the life of such a man to heart: that the best-lived life, the worthiest and grandest is the one lived for our fellow-men.

"Live for others," seems to be the true motto of true men's lives, and Dr. Thomas' life has been one worth living for. Peace to his noble memory!

## OUR MONTHLY GOSSIP.

*By W. E. Blakeney, D.D.S.*

"CULTURE is the ability to do the hardest thing in the easiest way."

COBALTOUS OXID is an irritant poison, as are all salts of cobalt.

MANY DENTISTS believe the first permanent molars are the only teeth that erupt normally.

DR. CONRAD says that "any crown, with him, is a last resort," and I am sorry for the doctor's patients.

DR. STEVENS uses tannin and creosote in root canals, and claims to have had but few failures.

DR. CRANE has used cobalt, in the place of arsenic, to destroy the pulps of teeth for thirty years.

TO REMOVE green tartar, a mixture of equal parts of pumice stone and tincture of iodin is recommended.

WHEN DR. LOUIS OTTOFY indulges in "slovenly operations," his "victims," he says, "are chosen from among his wife's relations." And may the good Lord have mercy on them!

THE OLDEST tree on earth is said to be the Boo tree, in the sacred city of Amarapoora, Burmah. It was planted in the year 288 B. C.

DR. TALBOT is of the opinion that filling roots with chloroform and gutta-percha is nonsensical, notwithstanding the fact that a large majority of our ablest dentists adopt this method.

IS THERE danger of producing pericemental troubles by the use of arsenious acid for the devitalization of pulps? Will the readers of the ITEMS kindly tell me their experience in the use of this drug?

DR. HEITZMANN has the pulp of a root treated with the Herbst method, which is transformed into fibrous connective tissue, showing that it must have been inflamed when treated and that it is still alive.

DR. W. R. BLACKSTINE's method which, he says, "has proven entirely successful, is not to fill the canals of teeth which are difficult to hermetically seal." Neither does any other dentist accomplish this miracle, only in imagination.

THE THEORY entertained by Dr. Herbst in regard to the treatment of the pulp, is that by burnishing tin or gold into the pulp-

cavity he creates an absolutely air-tight covering to the root canals, which is not obtainable with any other material.

"EVOLUTION," says Hans Black, of Dresden, Germany, "is a change brought about under the influence of geological revolutions from which not one individual of the species can escape, but pathological changes are entirely restricted to the single individual and to his personal regimen." This seems to be a logical conclusion.

"IN CASES of accidental exposure of the pulp in excavation of a cavity of decay," says Dr. Van Der Paut, "apply morphia and dilute carbolic acid, or creosote, with a dust of iodol, and then proceed to cap and insert a temporary filling. This is usually attended with success in young and healthy patients."

"WHEN A LARGE, open apical foramen is present," says Dr. Miller, "it may be advisable to incorporate a little finely pulverized iodoform into the cement with which such canals should be filled, on account of its beneficial action on the tissue about the end of the root."

DR. E. L. CLIFFORD believes that "the day of rational therapeutics has not arrived," and that "we cannot throw away our empirical methods simply because we do not know how they act. If we did, we would not put arsenic in a tooth to-day." The use of arsenic, doctor, has a very respectable endorsement for all that.

SIR JOSEPH LISTER has abandoned the use of bichlorid in favor of our old friend, carbolic acid. "It has been shown," he says, "that a 1 to 40 solution of carbolic acid is really superior in actual germicidal power for such organisms as cause inconvenience in surgery, as compared with any solution of bichlorid that could be used for surgical purposes."

A GERMAN DENTIST says that the muscles of mastication, like all parts of the body belonging to animal life, are of a duplicate form, for there is on one side of the median line a right, and on the other a left half, which are almost precisely alike, though in the domain of organic life there is rarely perfect symmetrical correspondence of the halves.

A DISTINGUISHED German professor, who speaks enthusiastically of pental on account of its advantages over all other anesthetics, because of its safety and effectiveness, nevertheless wishes it distinctly understood that "it should not be administered less ob-servedly than any other narcotic. All clothing," he says, "about the neck, chest and abdomen must be loosened and the respiration continually watched by a physician or trained assistant."

M. M. PINET AND VIAU, of Paris, have recently made several interesting experiments, hypodermically, with tropacocain as a local anesthetic. These gentlemen claim that tropacocain hydrochlorate possesses properties analogous to cocaine, and that no harmful effects follow its use. For dental operations, two-thirds of a grain in fifteen drops of water is sufficient in ordinary cases. When difficult extractions are required, four-fifths of a grain gives a complete anesthesia.

"BACTERIOLOGICAL RESEARCH in medicine," says Dr. E. C. Kirk, "have long ago placed the etiology of many important diseases, especially of the more virulent and fatal forms, beyond the point of reasonable conjecture, just as in dentistry the etiology of caries has been; and that the trend of bacterial pathology, so far as it relates to medicine, is now toward the solution of the problem of prophylaxis in those disorders whose etiology has been definitely determined."

"SODIUM PEROXID," says Dr. Kirk, "is not only valuable in itself for bleaching discolored teeth, and as an energetic sterilizer and detergent of infected dentine, but it furnishes us with a ready and easy means for procuring concentrated solutions of hydrogen peroxid for bleaching, for the disorganization and removal of purulent secretions in abscesses and pyorrhea, as an antiseptic solution for the irrigation of antral catarrh, and the general antisepsis of the oral cavity."

DR. HEITZMANN in combating a theory which opposed his own views, before the First District Dental Society of New York, said: "Hundreds of dentists have studied in my laboratory, but the gentleman who has just spoken has not been among them. If he had studied with me, he would not have asked how we distinguished living from dead teeth." I don't know which to admire most, the extreme simplicity of the question asked, or the painful modesty cropping out in the learned doctor's reply.

"WHEN WE come to the tedious process of extirpating pulps from the buccal roots of molars, or from wisdom teeth, or from first bicuspids, or the lower first molars, every one of us—I don't care who it is—will wish that he had some method of getting at the end of that root-canal other than by drills or broaches." So says Dr. C. F. W. Bodecker. The "end" is seldom, if ever, reached in the way suggested, notwithstanding the loud declarations to the contrary of those who claim to have got there. How does sodium peroxid come in here?

## OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.]

**Question 90.** *Would you advise me to sell my old dental engine, and to credit the amount thus obtained on a new one?*

Get a new one, by all means, if the engine you have does not suit you, but keep your old engine to use in case of breakage of the new, and especially if you have laboratory work. There is nothing more useful than an engine for cutting dovetails, drilling undercuts or holes for the purpose of attaching new to old rubber in repairing plates; for polishing between teeth when using rubber or celluloid facing, and for fine grinding in articulation of teeth at the chair. An old, worn hand-piece or engine will answer for laboratory purposes and for heavy drilling or polishing at the chair, that would soon ruin a new one for fine, steady work.

**Question 91.** *Is there no other way of regulating teeth than the orthodox one of moving the whole set? Case: Boy of twelve years; rather delicate constitution; both upper first molars gone; bicuspids on both sides occlude with corresponding lower on anterior sides—that is, the second upper bicuspids occlude between first and second lower ones instead of between second bicuspid and first molar. All the upper teeth are crowded forward, the two centrals projecting exactly a quarter of an inch over the lower teeth. The teeth are not of good structure, and, owing to crowded condition, have commenced to decay. What is the best course to follow?*

Extract the first bicuspids and draw the teeth back. If unable to draw into proper line without giving a hooked appearance to upper centrals, bands, properly arranged, will retard the development of upper jaw and allow nature, with little assistance, to do the rest.

**Question 92.** *What is the best and most expeditious treatment for an exposed pulp partially dead and highly inflamed?*

Apply cocaine or administer gas, and remove pulp at once. If access cannot be obtained to cavity for above treatment, apply oil of cloves and tannic acid, or apply carbolic acid and morphin; then devitalize with arsenic.

**Question 93.** *What do you consider the best form of nerve broach to use, and what is the best mode of removing broken pieces from canals? Will they cause trouble if left?*

Take your choice. We prefer for most cases a Donaldson hooked broach, if a small one can be had. A specimen examined recently was provided with a hook and shank of sufficient proportions for cod. A small, tough broach, with good taper and short shank—the long ones are too springy and

difficult to guide—is worth its weight in gold. It is bad practice to leave a broken broach in a root canal, though it has been done without causing trouble. If they become so wedged that it is impossible to hook them out, the canal should be enlarged down to the broken piece and a fine drill passed down at one side of it. Small points can be removed with chemicals, and often a broach attached to a magnet will remove them. With good broaches, that have not been often used, carelessness is the only excuse for this accident.

X.—We are pleased to receive your statement regarding treatment so arranged as not to interfere with nature, but your closing remarks go a little too far in that line, and are misleading. The Question Box is a great admirer of nature, but we must not depend on it beyond reason—there is a limit.

Nature will not sweep out your office in the morning, clean out your spittoon, or put twenty-dollar fillings in teeth that require them.

Nature plays a very important part in dentistry; is often interfered with and recklessly ignored.

Nature's greatest friend is cleanliness, and without that nature and science often become hobbled to a dead failure.

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**SACCHARIN AS AN ANTISEPTIC OF THE MOUTH.**—1. Saccharin is a powerful antiseptic of the mouth in weak solutions, but in strong ones it attacks the enamel of the teeth.

2. This property of attacking the enamel seems to be due to its acidity.

3. Neutralized solutions of saccharin, even very concentrated, are absolutely inoffensive for the teeth, and also sufficiently antiseptic, especially against the microbes of the mouth.

*La Odontologia*, a new Spanish monthly devoted to dentistry, edited by Dr. Florestan Auguilar, of Cadiz, Spain, contains in the October issue an excellent likeness of Prof. James E. Garretson, of Philadelphia, with a biographical sketch of the distinguished teacher and writer.

**EXPLOSIVE MEDICAMENTS.**—A patient afflicted with stomatitis ulcerous was undergoing a treatment by pastilles of compressed chlorate of potassium. He used to carry a quantity of it in a piece of paper, which he put in his pocket with his penknife. It happened that he threw himself heavily on a seat, and an explosion took place, and before he could divest himself of his clothing he was severely burned on his body. The chlorate of potassium exploded under the influence of the shock and got inflamed.

## EDITORIAL.

### CHEMICAL NOMENCLATURE.

We alluded last month to changes in the spelling of some chemical terms. These, and the changing of many geographical names, are quite significant. They show the trend toward simplified spelling generally. It cannot be longer laughed down. We have been often ridiculed for indulging in simplified spelling in past numbers of the ITEMS, but now these same journalists will fall in line with many of our suggestions, and claim "they always advocated such a reform." All right, only let us claim one step toward fonetifying. It is coming.

Now these great men of *The American Association for the Advancement of Science* give us permission, let us write bromin, fluorin, sulfur, sulfuret, chlorid, iodid, hydrid, oxid, hydroxid, sulfid, amid, anilid, chlorid, murexid, chlorin, annin, anilin, morphin, quinin, vanillin, absinthin, emulsin, glycerin, caffen, cocaine, glycol, phenol, cresol, thymol, acetyl, amyl, ethyl, albumen, asbestos, crystallin, etc.

These scientists even propose taking from us qualitative and quantitative. They prefer qualitive and quantitive. But as though dealing with pettish children, they give us but a step at a time. They have greater changes in reserve. As Prof. T. H. Norton, of the Committee, says:

It seemed proper to ascertain how far chemists will go in adopting the simpler forms of spelling advocated by the Philological Societies of Great Britain and America, availing themselves of the resultant economy and keeping in touch with the evident steady progress of phonetic reform in the English language.

An instance of this timidity is shown in the reasons assigned for retaining ph for f in phosphorus, etc., while changing sulphur to sulfur. He says:

Sulfur is modified in accordance with the general phonetic change going on in our language, and the change is extended to all the derivatives. It is a reform which brings us into accord with the French *sulfure*, *sulfit*, etc., the German *sulfat*, *sulfid*, etc., and the Italian *zolfo* or *solfo*, *solforico*, etc. It might naturally be asked, Why not extend this reform to phosphorus?

The reasons are here by no means so strong as in the case of sulfur. While the Italians use *fosforo*, the French and Germans still retain the *ph*.

Prof. Norton further says :

The changes recommended in this connection are perhaps the most far-reaching and the most subject to discussion. They involve the dropping of the final *e* from the names of all chemical elements and compounds formerly ending in *-ine*, and the uniform pronunciation of the final syllable with the short *ɪ*, as chlorin, amin, anilin, quinin, cocaine.

The advantages accruing from the application of the new rule are : *a.* The simplification, uniformity and economy of time resulting from the use of a single spelling for the same sound. *b.* The unvarying use in the termination *-in* of the short *ɪ*, the sound now employed in the vast majority of cases, the one proximating most nearly to the European *i*, and the one thereby most helpful to foreigners using our language, and *vice versa*. *c.* The harmonizing of the practice governing the use of this termination with the principles underlying the general rules for the pronunciation of other chemical terminations. *d.* The falling into line in this regard with the general movement towards phonetic reform in our language. *e.* The accord with the general rule in our language governing the use of the final *e* and its effect on preceding vowels.

The termination *-ID*. This replaces in all cases *-ide* (as oxid, chlorid, sulfid), and the *i* is invariably short. The reasons for this rule are much the same. Of the three pronunciations of this termination *-ide*, *ɪde*, and *ide*, in varying degrees of usage amongst us, the second appeared undoubtedly to be the most preferable; *-ide* is an uncommon, almost unnatural, pronunciation of the vowel in English, though it would bring our usage into unison with that of European countries, and simplify phonetic values for the ears of foreigners; *-ide* leads frequently to confusion with *-iie*, and is the value of *i* farthest removed from European usage; *-id* proximates closely to the Continental *ɪ*, into which it is easily lengthened, is readily recognized by the foreign ear, is not confused with the termination *-ite*, is in line with present phonetic progress, and has the backing of authority and usage. The short sound of *i* naturally dictates the dropping of the final *e*. "According to Smart and Cull, chemical terms ending in *-ide*—as bromide, chloride, etc.—should be pronounced with the *i* long; but all other orthoëpists are unanimous in making the vowel short; and the propriety of the latter mode of pronunciation is established by the fact that this whole class of words is not unfrequently spelled without the final *e*, thus *bromid, chlorid*" (Webster's Dictionary, "Principles of Pronunciation").

In conclusion, it may be said that the chemical section of the American Association recognizes the fact that there is still room for advancement in the path of phonetic reform, and that questions may still arise with regard to divergent usage or defects in existing rules. The task of collecting and collating such questions and of presenting them at a later date to the Association for action has been assigned to Professor James Lewis Howe, of Louisville, who will gladly receive all information, suggestions, or propositions pertinent to the subject from those interested in the perfecting of our chemical nomenclature.

## PERSISTENT VITALITY OF THE PERICEMENTUM.

Dr. W. J. Younger, of San Francisco, of tooth implanting fame, says there is such " persistent vitality of the pericementum of a tooth " that when one is replanted, transplanted, or implanted in the jaw, the vitality of this membrane is revived so that there comes about a living union between the living alveolus and the implanted tooth.

He also speaks of this " revival of life " as " renewal of life." Of course it cannot be both. If it is re-new-al it is life from death; if it is persistent vitality it is only an awakening of that which already exists.

But evidently Dr. Younger is wrong in both of these positions. There is neither " persistent vitality " nor " renewal of life." A tooth dead is dead forever. " What then produces such a growth between the implanted tooth and the alveolus to produce a firmness even greater than in a living tooth ? "

It is this: In the living tooth the union is by a living membrane kept moist and luxating by a living fluid; the dead tooth is imbedded in its newly made socket by the exudation from the alveolus of a cement that clings to the dead root, and so fills the surrounding space between the dead tooth and the alveolus as to produce what is usually called ankylosis or bony, or rather cemental, union.

" Well, is not this a living union ? " Yes, living so far as the cement is living, but not so far as producing life in the tooth or its cementum is concerned. It is the same as might take place if a bullet were imbedded there. Nature would immediately seek to surround it with an infolding cement that would hold it firmly, and if it did not fit its place precisely this exuding cement from the alveolus would fill the vacuum. Even when a foreign body is thrown into the muscles or into any organ, unless dissolution of the surrounding parts ensues, nature immediately goes about building around it a membranous covering called a cist. This is to prevent it from causing further irritation to the body.

" Well, it matters little what the theory is of the solidity of an implanted tooth."

Yes, it matters much, if there is renewal of life there is much more probability of continuance of usefulness than if it is only incised as with the bullet. This cemental clothing is liable to dissolve at any time. It frequently sloughs away, throwing out the foreign body with its own liquid. The dead tooth is more liable to be thrown out than the bullet, for if irritation intervenes sufficient to dissolve even a small portion of this newly formed cement, that same acidity will dissolve the dead root, or so much as so allow it to break off. It is for this reason so few implanted teeth are a success.

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#### “ONE OF THOSE MUNTEBANKS.”

A “professional” gentleman of prominence of New York city, writes us:

“Lately I witnessed in the West the operations of one of these mountebanks, and saw him extract hundreds of teeth, and I endeavored to interview all of his subjects immediately on their leaving his chair. Every one I questioned unanimously agreed that ‘it didn’t hurt me a bit.’ I used every means in my power to obtain a sample of the preparation used, but was unable to do so. Its mode of use was rubbing on the gum with the operator’s finger about one minute, and then extracting the tooth. I saw him remove a number of sore and inflamed teeth and roots, and the people seemed rather to enjoy the thing. I am greatly interested in this and should value your opinion.

“Would you drop me a personal letter giving me the solution you arrive at during its discussion in the ITEMS. Or could you direct me to some one who would be able to enlighten me?”

This reminds us of a high-toned esthetic, self-conceited dentist who, wrapping himself up in his professional cloak, said to us:

“Doctor, I have a ‘cheap John’ near me whom I wish you would go for heavy. He provokes the very life out of me. His prices are ridiculous, and he is getting more than half my practice in artificial work.”

“Oh, you needn’t trouble yourself about these ‘cheap Johns,’ ”

we replied; "they do such poor, slovenly work they can't hurt such a skilful dentist as you."

"That's the trouble," said he. "He does not only cheaper but better work than I can. I don't see how he gets them to stick so; and they look as natural as though they grew there."

"Then learn his secret and compete with him. Certainly with his skill and your respectability you could outstrip him."

"I would disdain being seen inside his old rook of a work shop. I'll fight him first."

Such aristocratic dignitaries have many lessons to learn. In this competing matter of fact world, it is the best that succeed. No glittering of surroundings and professions of skill, no stilted gait and dudish ways will succeed like success.

At the New Jersey Dental Conventions was nearly always present (he is dead now) a dentist noted for his skill and success, who was always an attentive listener. The most humble speaker had his attention, and the most raw-boned, ungainly country tooth-puller who had anything to show was approached with respect. He was a disciple at any man's feet from whom he could learn anything. This was the secret of his success.

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Labor under difficulties often leads to great achievements. The very roughness, perplexities, and seeming impossibilities of the way stimulate exertion, sharpen wit and concentrate to the fullest activity every faculty. Even success in such a course is of much less importance than the refining, strengthening, and maturing which thus leads to success.

And yet we all crowd for the easy road; and, if we could, we would have it paved with gold and strewn with roses. Ah, this may make the popular man, but the other road makes the strong man; this leads to fickleness, effeminacy and nonentity; the other to stability, growth and distinction. Would you be a dude?—take the first; but if you would be a commander, take the second.

## NOTES.

Dr. A. E. Matteson uses equal parts of plaster of Paris and hard coal ashes as an investment for gold work.

\* \* \*  
A sore eye baffled the skill of an oculist for a long time. The removal of a fistulous eye-tooth cured the eye.

\* \* \*  
Take your hard luck as you would a pill. If you grind your teeth over it, you will find it nastier than ever.

\* \* \*  
Miss Luella Cool, a leading dentist of San Francisco, has been placed in charge of dentistry at the Stanford University.

\* \* \*  
Dr. Wm. H. Steele, of Forest City, Iowa, has gotten up appointment blanks and pocket memorandums for chair work that are very handy.

\* \* \*  
Any artificial substitute for the teeth that cannot and is not kept clean is a nuisance.

\* \* \*  
Clasps around teeth to hold in a partial set of teeth are almost always a source of the irritation, abrasion, and destruction of the clasped tooth.

\* \* \*  
To produce a very hard point for drilling, bring the point to a white heat and plunge it into sealing wax.

\* \* \*  
It will soon become popular to instruct our school children in the care of their teeth. This is where their dental education should begin; and if all persons were more generally informed on this subject, there would be less loss of teeth and less expense in keeping them in repair.

\* \* \*  
A writer says soft spongy gold cannot be depended on for contouring. I saw, recently, a central incisor that I entirely built up with Watt's crystal gold, nearly thirty years ago, and it is still doing good service.

\* \* \*  
Dr. H. S. Lowry's method of contouring gold crowns is by making a die of the portion of the crown between the neck and gum surface. The band is fitted to the root of the tooth, then driven onto the above mentioned die, where the band is ready for the cap, which can be made by the Hollingsworth method.

As good a receipt as we have used for a tooth powder is: Five pounds prepared chalk, three-quarter pound castile soap, one-quarter pound finely powdered sugar, one-half ounce oil of wintergreen.

\* \* \*

Nitrate of silver not only overcomes sensitiveness in dentine, but on the surface of a tooth, next the margin of the gum, where sensitiveness is so often annoying, it also prevents the progress of its softening and disintegration. It has a wonderful effect in hardening soft enamel or dentine.

\* \* \*

One of the best combinations for the preparation of a root for filling, after removing the pulp to tan any remaining fibers, is tannin, made into a paste with equal parts of creasote and oil of cloves. A central incisor of my son was broken off by a fall, and the exposed nerve became very painful. After destroying it and removing all I could I mummified the fine thread of the apex, which was still tender, with this preparation. We were seldom without it for this purpose for the thirty-five years of our practice.

\* \* \*

"MAN," says Prof. H. P. Smith, "is simply a bundle of impulses, and the educated man is the one who has his impulses under his control. He is always cool and self-possessed in all his faculties." Too much mother-in-law will almost always knock such a fellow out in the first round. The professor evidently is not familiar with the peculiar phases of poor, weak human nature.

\* \* \*

THE DEADLY CIGARET.—William Homan, nineteen years old, who was employed in a shoe factory, died on Thursday morning at his boarding house, 818 South Sixth street, Camden, from the excessive use of cigarettes. Shortly before dying, he said: "Tell all my friends 'Duke's Best' have killed me, and beg of them never to smoke another."

\* \* \*

The wonderful usefulness and long life of "a mere stump" of a tooth, when skilfully crowned, was illustrated thus. Twenty years ago an upper second bicuspid was broken off, and remained without treatment five years. Then Dr. George Welch, of Washington, D. C., made for it a gold crown. It is yet as useful as any tooth in the man's mouth.

# FOR OUR PATIENTS.

## THE DENTIST.

Who opens your mouth like a Mammoth cave,  
And plows your gums with a barrel-stave,  
And prods your tongue when it won't behave?

The dentist.

Who stuffs your mouth with a bitter rag,  
And stops your wind with a rubber gag,  
And straps your head like a vicious nag?

The dentist.

Who finds decays where your teeth are sound,  
And probes you deep in his glee to wound,  
And leaps for joy when the nerve is found?

The dentist.

Who bores your teeth with a savage drill,  
And finds the nerves with a vicious skill,  
And roars with wrath if you won't be still?

The dentist.

Who runs his drill with a wicked glee,  
And shoves as none can shove but he,  
And smiles as bland as a bad Chinee?

The dentist.

Who twists your teeth with an iron pry,  
And carves your gums like a steak to fry,  
And grinds you up till you nearly die?

The dentist.

Who loves to look on his forceps cold,  
And grins as the cursed things take hold.  
And jerks in a way that can't be told?

The dentist.

Who lays before you a hundred steels  
With hooks and points that the patient feels  
At one brief glance from head to heels?

The dentist.

*Washington News.*

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“ H—h—hold on,” said the terrified patient, “ h—h—hold on.”

“ My dear sir,” said the complacent dentist, “ give yourself no uneasiness, I will,” and away he tugged till the tooth was out.

“ Why did you not hold on when I told you to ?” said the exasperated patient.

“ I did,” was the reply, “ as hard as I could.”

“ Well, you might have known I meant let go.”

## ADVERTISING EXTRAORDINARY.



## WORSHIPFUL TEETH AND TOOTH WORSHIPERS.

Teeth being of great importance in combats, and also as a source of trouble on account of neglect, it is not strange that some superstitions have gathered around them, and that the ignorant have made it even an object of worship. Thus Buddha's tooth is preserved as a sacred relic in a temple. The Cingalese worship the tooth of a monkey, the Malabar Islanders that of an elephant, and the Tongo Islanders worship a shark's tooth.

The Siamese were formerly the possessors of the tooth of a sacred monkey, which they valued very highly. In a war with the Portuguese they lost the sacred grinder and made every effort to recover it, offering at one time as high as 700,000 crowns for its safe return. The Portuguese were not slow to see the bargain and to let the worthless relic be returned. It is now kept in a gold box, inclosed in six other boxes, in one of the many temples of the Siamese capital.

There is a tradition that the human jaw was formerly provided with forty-two teeth, and the number was reduced when Chosroes, the Persian King, stole the piece of the true cross enshrined at Constantinople.

## NOTICES.

### VERMONT STATE DENTAL SOCIETY.

The seventeenth annual meeting of the Vermont Dental Society was held March 15th-17th. The officers now are:

President, Dr. A. J. Parker; First Vice-President, W. H. Wright; Second Vice-President, E. O. Blanchard; Treasurer, W. H. Munsell; Secretary, T. Mound; Executive Committee, G. O. Webster, C. W. Staples, F. P. Mathers; State Prosecutor, G. W. Hoffman.

Dr. G. Lenox Curtis, of New York, and Dr. J. H. Collins, of Granville, N. Y., were made honorary members.

\* \* \*

The Alumni Association of the Missouri Dental College, Dental Department of Washington University, held its annual meeting March 14th, 1893, in the college building. The following were elected members: Dr. J. A. Hulen, Dr. W. E. Weller, Dr. J. L. Jenkins, Dr. P. W. Keller, Dr. P. H. Morrison. The officers for the ensuing year are: Dr. P. H. Morrison, President; Dr. W. G. Cox, Vice-President; Dr. C. E. Schumacher, Treasurer; Dr. T. L. Pepperling, Secretary. Executive Committee, Drs. Lindsley, Helmuth and Bartlett.

\* \* \*

The Florida State Dental Examining Board and the Tenth Florida Dental Association convenes in Gainsville on the first Tuesday in May, and will be in session till the evening of the 5th. A cordial invitation is extended to all reputable dentists. Special railroad rates will be secured. Hotel rates \$1.50 per day. Nothing will be left undone to make the meeting one of the most enjoyable and interesting ever held in the State.

*B. B. Smith, Pres. Florida State Dental Asso.*

\* \* \*

The Nebraska State Dental Society will hold its annual meeting at Lincoln May 16th, 17th, and 18th. All are invited.

*D. P. Sims, Cor. Sec., Lincoln, Neb.*

\* \* \*

The Baltimore College of Dental Surgery had 137 matriculates this year.

\* \* \*

The Dental Department of the University of Maryland matriculated 108 the last session; number of graduates, 16.

## IN MEMORIAM.

DR. W. W. ALLPORT.

Our life-long friend has gone. Dr. Allport, of Chicago, and I were school boys together, and we have worked side by side ever since; not in the same city, but in the same profession, and with somewhat a similar experience.

We were of the same age; born in 1825; attended the same academy, both working our way through, he as tailor, and I as clerk; and then both entering the medical profession, to change for dentistry. He chose Chicago, and I Winona, Minnesota. At this time we each had a family and no financial means. It was with both, "Root hog or die." He rooted—almost lived on roots for a time.

Dr. Allport's first office was 7 by 9 feet, on Lake street, and so straitened was he that, even to pay the rent of that, he had to allow a physician to claim one corner, while he occupied the other. For a cabinet, desk, table, and tray, all in one, for his instruments, and few at that, he put up a board, covering it with a newspaper. For a dental chair, he borrowed of a neighbor a second-hand barber's chair, and for a carpet—ah! he had none, and he was not ashamed to do his own sweeping.

For my dental chair I had my wife's rocker, elevated on a rude platform. Wife and babe did sometimes complain for the want of that rocker, but "necessity knows no law," and therefore I was allowed to keep possession till a kind lady showed me how I could do better.

But Dr. Allport had showed some skill before he started for himself in this modest way. A dentist on Lake street, he had worked for a month or two, wanted to get married, and he was intrusted with the office while he should make final preparations and take a bridal tour. Many of the patients he there met followed him to his improvised office, and stuck to him in spite of its and his poverty. For the first two months his earnings were but \$60. A professional man who has lived in a city with a family dependent on him for support, rent to pay, dental materials to buy, and other necessities to provide for, know what that means. But he had a wife as plucky as he was. We had been playmates together from early childhood, and she had always showed a self reliance and aggressive spirit that well fitted her for a heroine in danger, trouble,

or exigency. We had no fears therefore of her starving when we knew of their straitened circumstances in Chicago. We will not tell how she kept the wolf from the door, but one thing she persisted in, "Walter, get what you want for the office, *at any rate*, and keep yourself in good clothes; never mind me, or what we have to eat." With such a wife, and his own indomitable perseverance, success was, *of course*, assured, as it will be always.

It was not very long after this that we visited him in his new office, which was not far from the first. He invited us to look over his chart book for a few months back. This showed a business averaging \$500 a month. The next time we were with him his books showed a clean cash practice of over \$2,000 a month. There were many fillings varying from \$200 to \$600 each; the work for a single patient sometimes aggregating from \$1,200 to \$2,000. He died worth about \$200,000.

In 1858 Dr. Allport was elected President of the Western Dental Society; in 1860 he was elected the first Chairman of the American Dental Association; in 1865 he was elected President of the American Dental Convention; and in 1886 he was elected President of the American Dental Association. In 1881 Rush Medical College conferred on him the honorary degree of M. D., and for many years he was Emeritus Professor of Dental Surgery in that institution and in the Chicago Dental College. He was the means of creating the dental section in the Ninth International Medical Congress which met in Washington in 1887, and was made Vice-President of the section. He was one of the organizers of the Chicago Microscopical Society and for a long while its President. He was largely instrumental in the organization of the American Dental Association and in projecting the World's Columbian Dental Congress to be held in Chicago this summer, of which it was confidently expected that he would be the President. He was also the editor for two years of the *People's Dental Journal*.

Dr. Allport was an accepted authority on all subjects connected with dentistry, to which he devoted special attention, and he enjoyed the honor of having been the first dentist in the world to take advantage of the cohesive properties of gold for the purpose of restoring the front teeth to their original form when large portions have been lost by decay. This interesting fact is established by the report of a society meeting published in the *New York Dental Recorder* in 1856.

Dr. Allport was a man of venerable and distinguished appearance, with a commanding figure, a noble head, and features expres-

sive of intelligence, precision, honesty, and courage. He was pleasing and affable in manner, easily approached by young men, always ready to learn, and with an unfailing charitable instinct. But no man was harder to impose on, and when he scented crookedness he became excessively belligerent. Like all positive characters he had devoted friends and unforgiving enemies, but both alike respected his integrity and his independence. He was a member of Grace Episcopal Church.

Dr. L. P. Haskell says:

He was a remarkable man in some respects; has always been my *beau-ideal* of an operator. In fact I have never seen his equal. I mean in his entire makeup, and I feel we shall never look on his like again. The profession is certainly a great loser, and I regret he could not have lived till after the Columbian Congress.

His nervous system was so delicately poised, that in the height of his popularity and skill, I have heard him say he could not work while another dentist was looking on.

A little incident in our academic days shows the pluck that has followed Dr. Allport through life, notwithstanding his natural timidity. Connected with the school in Watertown, N. Y., where we lived, was a weekly session of a debating society, largely attended by the scholars and young people of the village. Neither "Walt" nor I had ventured to enter into the discussions, for as surely as we made a blunder we should have been drowned by the hisses of the meeting.

"Tom," said he one day, "if you will lead off in debate next Wednesday on one side, I will on the other; and I will stand till I can say something, if it takes me all night."

I accepted the challenge, and we each led in the discussion. It was the first public speech for either of us, and of the result neither could boast.

"Mr. President," said Walter, "Mr. President, the question of the evening is—I am to take the affirmative of this question. The question, Mr. President, is—Mr. President, will you read again in the question? [It was read.] Mr. President, I am to take the affirmative of this question. Which side is that? I don't understand it, and my opponent, Welch, is to take the negative. I see I have prepared myself on his side. But, Mr. President, I don't see how that young man can say anything on that side. It is a self-evident proposition. It states—the question states—that is the proposition is, Resolved—I forget the rest of the question, Mr. President; but Mr. President, it is too plain for any one to deny; and I don't be-

lieve my opponent can refute my arguments, if I could bring them to my mind, though I prepared myself on the other side. That is, I think I did. I have really forgotten the question or what I was going to say."

Of course this created great merriment, amid which I rose to reply. But I did but little better.

The next day he said to me, "Tom, will you stick? I will till I can speak without making a fool of myself. Will you?"

We agreed, and those who have heard him in his maturity, know there have been few in or out of the profession, in conversation or on platform, who have excelled him in eloquence. His whole life is a great encouragement for our young men.

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#### DR. WM. F. REHFUSS.

We are surprised to be called on to announce the death of this promising young man. He was only 26 years of age, and yet he had already come so prominently before the dental profession, that his name and writings are familiar to us all. His magazine articles were vigorous and learned. But he was chiefly known as a writer on dental jurisprudence. His book on this subject is a standard work. What has associated him more immediately with the readers of the ITEMS OF INTEREST is his series of articles on *Oral Diseases; Surgical and Non-Surgical*, now passing through the present volume. He had just finished his portion of this series, the last of which will appear in the June number. Then the portion belonging to his associate, Dr. Brinkmann, will be taken up.

Dr. Rehfuss had hardly an hour's notice of the approach of death. It was only "a cold." And who cannot successfully manage "a cold?" But its course was rapid, developing congestion of the lungs and kidneys, and finally involving the whole system, less than a week, and he was ready for the grave. Such is life; to some so brief, and to all not long. Yet to each of us, it is the most important, the most momentous, part of all eternity.

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With deep regret we learn of the death of our esteemed friend, Dr. E. D. Nickson, of Humboldt, Iowa. He was a gentleman and a friend in the true sense of the word. The deceased was a lover of his chosen profession, and took a great interest in every thing connected with it. He was kind, yet earnest in his manner, and had

a warm, genial way of greeting friends and new made acquaintances that made him hosts of friends. We first met him at Sioux City, at our State Society. The family have the sympathy of a large circle of friends in their sorrow. Peace to his ashes. There will be many a brother dentist who will miss his smiling face and hearty hand-shake at the meeting of the State Society.

*Wm. H. Steele, D.D.S.*

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San Francisco loses a prominent dentist in the sudden and early death of W. G. Winter. He died of apoplexy, aged forty. He was born in Dane, Wisconsin; completed his literary career at the Maryland University at Beaver Dam, Wisconsin. He graduated in dentistry at the Philadelphia Dental College in 1877, and in medicine at the Medical College of the Pacific, after which he entered the practice of dentistry in San Francisco, in which he continued till the time of his death.

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A prominent figure has passed from the activities of the dental profession by the death of Dr. Fred A. Levy. Whoever has attended a New Jersey Dental Convention for the last twenty years could not fail to see the smiling face and persistent activity of the doctor. He was quite as active and useful in the Central Dental Association as in the National Association of Dental Examiners, where he was Secretary for many years.

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“Words fitly spoken are like apples of gold in pictures of silver.”

Our brother practitioner, Dr. C. A. Smorvin, of Brooklyn is in deep affliction, his companion for many years has passed beyond the limited confines of this mortal career to the unlimited of the immortal. We do but a little, when we tender our sympathies; yet it is something to say we know what a like sorrow means, and we recall that he did not pass it unnoticed. In this hour of life, thoughtlessness is far too common, so we trust these few words may stir our common sympathy for the doctor in his sad hours. May he come to know that, “there is no sorrow that heaven cannot heal.”

*G. A. Mills, New York City.*